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CONTENTS AND SUBJECT INDEX

The Complex of Eczema. John H. Stokes, M.D., Philadelphia....1127

Antidotes for Strychnine Poisoning. Howard W. Haggard, M.D., and Leon A. Greenberg, Ph.B., New Haven, Conn.....1133

Chorionepithelioma of Uterus. Julius E. Lackner, M.D., and M. L. Leventhal, M.D., Chicago.....1136

Peripheral Nerve Paralyses Following the Use of Various Serums. Forrest Young, M.D., Rochester, N. Y.....1139

The Treatment of Chronic Osteomyelitis with Special Reference to the Use of the Maggot Active Principle. S. K. Livingston, M.D., and L. H. Prince, M.D., Hines, Ill. 1143

The Baer Maggot Treatment of Osteomyelitis. Edward H. Wilson, M.D.; Charles A. Doan, M.D., and David F. Miller, Ph.D., Columbus, Ohio 1149

Gastric Mucin in the Treatment of Peptic Ulcer. Arthur J. Atkinson, M.D., Chicago.....1153

The Dangers of Using Impure Mucin in the Treatment of Peptic Ulcer. Andrew B. Rivers, M.D.; Frances R. Vanzant, M.D., and Hiram E. Essex, Ph.D., Rochester, Minn.1156

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Repair of a Torn Patellar Ligament. E. K. Cravener, M.D., and Ralph D. Reid, M.D., Schenectady, N. Y.1157

Anterior Colpocele Due to Fibromyoma. Wendell Downing, M.D., Le Mars, Iowa.....1157

COUNCIL ON PHARMACY AND CHEMISTRY 1158

COMMITTEE ON FOODS 1159

OFFICIAL REPORTS AND RESOLUTIONS

Reports of Officers of the American Medical Association.....1161

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

Keeping the Doctor Up to Date. Ray Lyman Wilbur, M.D., Washington, D. C.....1209

EDITORIALS

The Antivivisectionists' Questionnaire 1187

Significance of Gastric Acidity Produced by Various Stimuli....1187

Nutritional Edema.....1189

CURRENT COMMENT

A Suggested Treatment for the Depression 1189

Allantoin in Human Urine.....1189

The Lymphatics of the Thyroid.1190

Limitations of Bacteriophage Therapy 1190

(Subject Index on next page)

ASSOCIATION NEWS 1191

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Another SAUNDERS BOOK on Page 3

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "Ml," Medicolegal; "ME," Medical Economics.

A. M. A., Auditor's report....1178
American Medical Directory, report.1165
Baker Suit....1175
Board of Trustees, report....1163; 1178
buildings and equipment....1163
Bureau of Exhibits, report....1173
Bureau of Health and Public Instruction, report....1168
Bureau of Investigation, report....1169
Bureau of Legal Medicine and Legislation, report....1170
Bureau of Medical Economics, report....1170
Chemical Laboratory, report....1166
clinical lectures at New Orleans session.1186
Committee on Foods, report....1167
Committee on Scientific Research.1174; 1176
committees, special....1175
Constitution and By-Laws, amendments.1162
Cooperative Medical Advertising Bureau, report....1165
Council on Medical Education and Hospitals, report....1180
Council on Pharmacy and Chemistry, report....1165
Council on Physical Therapy, report....1167
Council on Scientific Assembly, report.1186
dual membership....1162
Fellowship....1162
House of Delegates, election and registration....1162
Hygeia, report....1165
income and expenditures....1163; 1179
Journal....1163; 1179
journals, special....1163
Judicial Council, report....1179
Library, report....1164
membership....1161
Quarterly Cumulative Index Medicus..1164
resolutions to be submitted at New Orleans....1162
retirements and appointments....1175
Secretary, report....1161
Section on Diseases of Children, change of name....1186
Therapeutic Research Committee..1166; 1175
Treasurer's report....1178
Addison's Disease, suprarenal cortex extract for....ab-1229
Agranulocytosis, experimental....ab-1220
after injecting neoarsphenamine....ab-1229
hypogranulocytosis and....ab-1220
roentgen treatment....ab-1219
Albuminuria in college men....ab-1220
Alcoholism, diagnosis....ab-1227
Amniotic Sac contents in lungs....ab-1218
Amyloidosis, liver meal for....ab-1224
Andrewes, Frederick, death....1198
Anesthesia, low spinal....ab-1228
Angina Pectoris and auricular fibrillation....ab-1229
Antivivisectionists' questionnaire....E-1187
Aortic Valve insufficiency, musical murmur in....1201
Appendicitis, acute....ab-1227
Arthritis, atrophic....ab-1225
sympathetic ganglionectomy in....ab-1223
Aschheim-Zondek Test in forensic medicine....1200
Association News....1191
"Atmos" Nebulizer; Atmozon....1209

Bacteriophage therapy....E-1190
Bile Duct, cystic dilatation....ab-1222
total traumatic rupture....ab-1231
Blood donor, polycythemic patient as....1209
pressure reduction after exertion....ab-1233
Book Notices....1212
Books Received....Adv. page 36
Brain, metastases in gliomas....ab-1226
tumors, reflex-grasping in....ab-1226
Bread, use of chemicals in....1202
Breast cancer, radium treatment....ab-1227
tumors, borderline....ab-1217

Cancer and weight....ab-1222
erythrocyte resistance in....ab-1234
mortality....ab-1234
traveling exhibit....1200
Carotene, hematopoietic power....ab-1231
Cerebrospinal Fluid, salt in....ab-1232
Children, physical development, Rumania.1202
Colpocele, anterior, due to fibromyoma..*1157
Committee on Foods....1159
Commonwealth Fund, report....1196
Correspondence....1205
Council on Medical Education....1205
Council on Pharmacy and Chemistry....1158
Cranium, closed traumatisms....ab-1231
fracture....ab-1221
osteitis of flat bones....ab-1230

Deaths....1203
Dengue, prevention, Japan....1201
"Depression," suggested treatment for...E-1189
Diabetes Insipidus, pathogenesis....ab-1229
Diphtheria, phylactic treatment....ab-1227
immunization campaign, Virginia....1195
Disease in the "New Stone Age"....1201

Eczema, complex of....*1127
Edema, nutritional....E-1189
Elbow, fibrous ankylosis....1208
Electric shock, muscle fibers after....ab-1233
Encephalitis, Epidemic, sequels, alkali reserve in....ab-1232
atropine sulphate in Parkinson's syndrome....ab-1232
Erythrodermia desquamativa from arsphenamine....ab-1232
Erythromelalgia....ab-1207
Erythrophagocytosis, mononuclear, in blood of new-born....ab-1218
Esophagus cancer, etiology....ab-1217
Eugenics: sterilization, compulsory; constitutionality of statute....Ml-1215
Evidence: dying declarations; when admissible....Ml-1216

Foreign Letters....1197
Fractures, auscultatory percussion of..ab-1224
healing effect of insulin....ab-1224
French Association of General Medicine organized....1199

Gallbladder, "strawberry"....ab-1221
inflammation, referred pain in....ab-1253
oral cholecystography....ab-1236
Gas appliance ordinance, Baltimore....ab-1225
Gee's Disease....ab-1236
Glaucoma, surgery in....1208
Goiter, sporadic, on genotypical basis....ab-1236

Hamaguchi, Mr., cause of death....1201
Head, injuries, nervous disorders due to.ab-1128
Health Day, Philadelphia....1194
public health course by mail....1193
Heart, bone transmission of murmurs...ab-1232
cancer, metastatic....ab-1218
concretio cordis....ab-1222
congestive failure....ab-1220
disease, chronic rheumatic....ab-1218
disease in children, digitalis studies on.ab-1218
sounds, artificial production....1199
Hemophilia, protein sensitization for....ab-1218
Hospitals, teaching, payment of medical staffs....1198
psychiatric, for children under 13....1194
Human Relations, course in, at Tufts....1193
Humidity, Tucson vs. Phoenix....1209

Insulin effect, time factor in....ab-1233
Intestines, tuberculous enterocolitis....ab-1219
localized phlegmonous enteritis....ab-1226
Intravenous continuous infusion....ab-1235

Jaundice of biliary lithiasis....ab-1229
peptic ulcer in....ab-1222
serum cholesterol in....ab-1235
Joints, intra-articular fibrocartilages....ab-1228

Kober Medal awarded Dr. Joslin....1195

Labor, guanidinemia in relation to....ab-1230
pains, measuring....ab-1235
Lead poisoning, incidence....1206
Leprosy, conference on....1196
Leukemia, chickenpox and generalized zoster....ab-1236
Leukocytes after operation, relation....ab-1236
Leukosis, chicken, transmission....ab-1236
Lewis Linn McArthur Lecture....1192
Liver extract, potency....ab-1219
juvenile cirrhoses....ab-1236
necrosis....ab-1222
Lung, postoperative massive collapse...ab-1226
absorption of gas....ab-1220
effort pulmonary edema....ab-1230

Maggot treatment of osteomyelitis..1143; *1149
Malpractice: limitation of action....Ml-1215
Marriages....1203
Maternal deaths, none, in Decatur....1192
care, adequate, campaign for....1193
Measles in Contra Costa County....1191
Medical Practice Acts: licenses; revocation, dying declarations....Ml-1215
Medicolegal....1215
Medulla Oblongata, lateral syndrome...ab-1226
Meetings, Coming Meetings....1216
Meninges, chronic subdural hematoma...ab-1226
Menopause, increased sexual desire at....1207
Metabolism, basal, effect of sedatives and narcotics on....1206
Muscles, injuries....ab-1228
contractures in wrist and fingers....ab-1223
Myopia, enucleation of lens for....1200

Narcotics, control of....1195
Néon light irradiation, effect....ab-1231
Nephritis, acidosis....ab-1220
Neuroses, traumatic, and workmen's compensation acts....Ml-1216
Neurosyphilis, apoplexy and external strabismus in....1205
New and Nonofficial Remedies....1158
News....1191
Nose, drainage of mucus....ab-1221
Obesity....ab-1235
Omentum, torsion....ab-1221
Ophthalmia, sympathetic, and treatment.ab-1229
Osteomyelitis, maggot treatment..*1143; 1149
Ovary, neoplasms....ab-1217

Paralysis, facial, surgery for....ab-1220
incubation period of dementia paralytica....ab-1236
Patella fracture, unusual cause....1198
ligament, torn, repair of....*1157
Peptic Ulcer in jaundice....ab-1222
mucin in treatment of....*1153; 1156
pepsin therapy....ab-1128
thrombi and emboli in....ab-1236
Periosteum, osteogenic capacity....ab-1227
Phlebitis, skin temperatures in....ab-1236
Physician, keeping him up to date....*1209
Pleuritis, primary, in adults....ab-1236
Pneumonia, carbon dioxide plus oxygen for....ab-1225
Poisons, volatile, regulation of....1196
Poliencephalitis, possible diagnosis....1206
Poliomyelitis, roentgen therapy in....ab-1232
Population of Paris....1198
Psittacosis, regulations for control....1191
Puerperal Infection, de Kruif on....C-1205

Queries and Minor Notes....1205

Radio Program....1191
Radium bomb to be withdrawn....1197
Radius, Colles' fracture....ab-1221
Raynaud's Disease, sympathectomy in...ab-1224
Red Cross, Japan....1202
Rheumatism in London children....1197
Roentgenology, new book on....1202

Sacro-Iliac Disease, chair test in....ab-1224
Safety contest, traffic....1195
Salyrgan, use of....1208
"Saver of Mothers"....C-1205
Serums, peripheral nerve paralysis from.*1139
Shoe dressings, dermatitis from....1207
leather dermatitis....1197
Shoulder, traumatic dislocation....ab-1224
Showa Medical College....1201
Skin cancer....ab-1218
Smallpox among Shanghai refugees....1196
Society Proceedings....1216
Spinal Cord, division of anterolateral columns....ab-1234
Spine, congenital scoliosis....ab-1232
spondylolisthesis....ab-1226
tuberculous spondylitis....ab-1224
Staphylococci toxins, skin reactions with.ab-1234
State Board Examinations....1210
Stomach acidity....E-1187
cancer, etiology....ab-1217
glutamic acid hydrochloride increase free hydrochloric acid in?....1207
Streptococcus toxins, skin reactions with.ab-1234
epidemicus of septic sore throat....ab-1221
Strychnine poisoning, antidotes for....*1133
Suprarenal cysts, bilateral....ab-1236
Syphilis involving nervous system....1208

Teeth of the dead, removing gold from.E-1189
perfect, of islanders in South Atlantic.1197
Tendons, injuries....ab-1228
Testicle, undescended, and underweight....1208
Tetanus antitoxin, paralyses following....*1139
phylactic method for....ab-1227
Thomas W. Salmon Lectures....1194
Thrombophlebitis, streptococcus....ab-1231
Thyroid, lymphatics of....E-1190
malignant tumors....ab-1225
Tonics and Sedatives....Adv. page 30
Trichinosis....1207
Tubercle Bacillus, saprophytic forms....1200
Tuberculin, value in diagnosis....1197
Tuberculosis, milk-borne....ab-1222
Alpine sanatorium....1199
pulmonary, anemia in....ab-1236
pulmonary, gold therapy....ab-1230
spherical bodies in pneumothorax space....ab-1234
Tumors, experimental production....ab-1217
Typhoid, milk-borne....ab-1223
vaccine intravenously, reactions to....ab-1219

Undulant Fever, milk-borne....ab-1223
Urine, allantoin in....E-1189
acetonuria in acute abdominal disorders....ab-1235
Uterus, chorionepithelioma....*1136

Varicose Veins ulcer, treatment....ab-1232
Vital Statistics in Rumania....1202
birth rate, lowest, Maryland....1192

Wassermann Tests, repeatedly positive....1209
Workmen's Compensation Acts; malpractice by physician, liability of employer.Ml-1216
neuroses, traumatic; compensability..Ml-1216

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THE COMPLEX OF ECZEMA

A DIAGNOSTIC AND ETIOLOGIC ANALYSIS *

JOHN H. STOKES, M.D.
PHILADELPHIA

To the practitioner trained from ten to twenty years ago in this country, exudative inflammation of the skin is "eczema." Neither dermatitis nor eczema is a disease. Both are complexes made up of a number of components or factors, expressed in the objective sign language of the skin, which includes erythema, vesiculation, oozing, crusting, scaling, fissuring, thickening and hyperpigmentation. These signs are, so to speak, the strings on which etiology plays the complex symphonies of discomfort, not to say misery, disfigurement and incapacity, which are dermatitis and eczema. The Germans, able students of the details of pathologic mechanisms, call eczema that form of dermatitis in which the epidermis exhibits an intrinsic quality of hypersensitiveness to irritants, specific or general.[1] About 5 per cent of all human beings exhibit this intrinsic hypersensitivity. In order to clarify the field of "eczema" I propose, for the moment, *not* to adopt this definition of eczema but to use a broader one, based on the view that all inflammations of the skin exhibit a complex rather than a simple etiology, analyzable on careful study into what might be called predisposing background and exciting causes. An eczema is here defined, then, as a persistent dermatitis in which the predisposing causes or background outweigh the immediate cause or causes. The new German concept fits into this scheme as a subhead, for it becomes "eczema allergicum," to coin a phrase, in which epidermal hypersensitivity is the factor that dominates the picture. Thus one may speak of neurogenous eczema, or even neuromycotic eczema, in which an exciting cause such as a yeast infection leads to a dermatitis whose extension and persistence is in part due to the overshadowing influence of the nervous system on the sweat and vasomotor mechanisms, which supplies the background for the yeast growth. Thus "eczema" becomes again a broad etiologic conception, harmonizing with the very wise tendency of dermatology to return to general medical concepts and relations for the full comprehension of its problems. This seems to me a wiser use of the term than to apply it to single, local or special phenomena, anatomic or functional.

The day should now be passing, too, I believe, when one can feel that all reasonable demands have been satisfied by a mere description of appearances, without reference to what Clark Maxwell called the "particular go" of the phenomenon. "Eczema vesiculosum," for example, is the name of an appearance, not an analysis of etiologic components. How inevitable, however, such use of mere names must be for the time being, in view of our ignorance of causal mechanism, is evidenced in my present use of the term "diathetic eczema," a complex of hereditary, metabolic, morphologic and neurogenous factors whose difficulty of definition is perhaps expressed in a word which implies "constitutional" and "underlying" rather than merely local and immediate exciting causes. It might in certain cases be named, as organic chemists label their compounds, "heredo-ichthyo-pyogenic-allergic neurogenous eczema," were it not for the unwieldiness of the term. Yet the effect of such terminologic and etiologic analysis on treatment is often startling and fully justifies the effort.

Without more exordium, therefore, I propose to speak not of seborrheic eczema, or mycotic eczema, or even of pure allergic eczema (a term of damnation to the Germans), unless the named designation overwhelmingly dominates the picture. Instead, I shall speak of these symptomatic pictures as if they were components in a complex and look at all eczema for the moment in the light of their interplay.

First, what are the factors or components underlying an eczema? In an intimate and careful study of a series of cases, one finds evidence of the existence of etiologic elements to which one may give the following convenient labels, though doubtless there are others that are still unrecognized or that I may fail to mention.[2]

1. The hereditary or familial predisposition factor.
2. The ichthyotic or dry skin factor.
3. The seborrheic habitus or sebaceous dysfunction (oily skin) factor.
4. The pyogenic factor.
5. The mycotic or fungus infection factor.
6. The focal intoxication factor.
7. The metabolic factor with special reference to carbohydrate metabolism.
8. The allergic or hypersensitivity factor, general and specific.
9. The neurogenous factor.
10. The diathetic state or eczema-asthma-hay fever complex.

Future study will undoubtedly show close relations between certain of these groups. Some of them may indeed be facets of a single process or meet on common ground, as in the carbohydrate element in the metabolic and seborrheic processes, or the allergic

* Read before the Postgraduate Assembly of the University of Washington and the King County Medical Society, Seattle, July 13, 1931.

1. Jadassohn, J.: Aetiologie und Pathogenese des Ekzems, Proc. VIII Cong. Internat. Dermatol. & Syph., 1931, pp. 64-98. Becker, S. W.: Eczema: Fundamental Practical Considerations, J. A. M. A. 97:983 (Oct. 3) 1931. Bloch, Bruno: Ekzem und Allergia, Proc. VIII Cong. Internat. Dermatol. & Syph., 1931, pp. 99-107.

2. The infiltrative "eczematous" and erythrodermic manifestations associated with leukemias and lymphomas are here omitted to simplify the analysis but must be recalled in diagnosis.

relations of mycotic and pyogenic processes. Even the psychogenous and neurogenous factors may yet present fusion points with allergy, as they are beginning to do in the etiology of asthma. In fact, in diathetic eczema, just such a fusion seems to occur, ill defined though the outline of the combination still seems.

Let us now consider these factors one at a time—their diagnosis and their influence on treatment.

First let us have a little dermatologic legerdemain to show how physical criteria of a purely objective character help the specialist to bring his diagnostic rabbit from the hat of seemingly hopeless confusion that represents the appearance of the ordinary eczema patient.

Distribution tells a surprising amount about an eruption, even before one has clearly identified the elementary lesions or parts of which it is made up. Certain of the foregoing factors (2, 3, 4, 5 and the "diathetic" eczema of which I spoke) have distributions roughly amenable to diagram as shown in the illustrations. By a careful study of the stripped patient, the

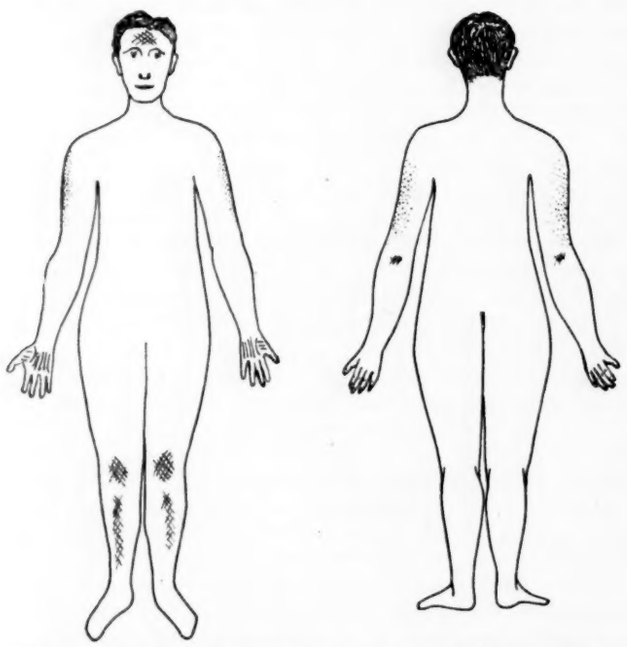

Fig. 1.—The distribution landmarks of the ichthyotic component in "eczema" etiology. This "dry skin" element is recognized by the "parchment" or heavily striated palm, the tendency to horny plugging of the hair follicles along the outer sides of the arms, the ready callusing of elbows and knees, and the presence of dry platelike scaling on the uninflamed forehead and pretibial skin.

proportion of these various components taken in connection with the character of the lesions and the landmarks of ichthyosis (which is not a dermatitic state) may be estimated as the basis for diagnosis and treatment.

Of course, an observer with dermatologic experience can realize the extent to which these pictures can be superposed on one another. The mycotic and the seborrheic forms of eczema blend at times in ways that are not out of keeping with the growing belief that "seborrheic dermatitis" has a yeast infection factor underlying it (Benedek,[3] C. J. White,[4] Cleveland White[5]). But if the flexures of the groin and axillae, the fingers, toes and anal cleft are involved, the tone or trend of the combination is strongly toward a mycotic or fungus etiology, with pyogenic organisms a close second, as Mitchell[6] has suggested, and likewise Ravaut[7] with his intertriginous "levurids" or sensitization correlates.

Distribution, then, gives the first clues as to which group of factors one may be dealing with. But this is only a single item. As the picture is more closely analyzed and the patient's history carefully taken, the numbered components appear with the following briefly summarized earmarks to identify their instrumentality in the composite picture of dermatitis or eczema presented by the patient:

1. Still imperfectly understood and studied, it none the less appears that the combination of seborrhea and pyogenic or other infection susceptibility (best seen in acne, for example) has a distinct hereditary and familial background. Sieges of boils, carbuncles and the like, acne, seborrheic scalps and baldness are all subject to some extent to family influence. Ichthyosis, the congenitally dry, irritable skin, is strikingly hereditary and can easily be traced through two or three generations as a predisposing influence. An even more potent hereditary influence is that of allergic susceptibility. Familial urticaria, like hay fever and familial eczema, is hereditary to a pronounced degree. More interesting yet, as one sees it in the diathetic type of eczema, is the history of family neurotic predisposition which helps to suggest the correlation of a neurogenous background with allergic phenomena and hypersensitivity. It is important, therefore, to take in detail and to weigh the history of the eczema patient, for from it one may appraise the relative weight and importance of the seborrheic, the allergic, the ichthyotic trends in his case.

2. The earmarks of ichthyosis, or "dry skin," in a patient with eczema are that (*a*) the patient is born with the condition, though in varying degrees; (*b*) he has the "parchment palm," dry,[8] parchment-like and heavily lined, especially across the thenar eminence; (*c*) there is a tendency to dryness and polygonal scaling of the skin over the front of the tibias; (*d*) there is often callusing of the kneecaps and elbows; (*e*) there is follicular plugging, nutmeg-grater-like, of the skin over the outer surface of the upper arms; (*f*) in pronounced cases there may be slight, dry, nonerythematous scaling of the forehead; (*g*) there is notable relief from dryness, roughness and irritation in summer, owing to the substitution of freer sweating for lack of natural fat secretion.

The presence of an ichthyotic factor affects treatment thus: (*a*) It makes the prognosis less favorable, because it is inbred and incurable; (*b*) it demands exposure to sunshine and warmth, in imitation of summer; (*c*) it demands avoidance of soap, which extracts what little fat there is in and on the skin; (*d*) it influences pyogenic infections, for a fatless skin is more penetrable and less resistant; (*e*) it demands grease, generally and frequently applied; (*f*) it often contraindicates roentgen therapy, which makes a bad matter worse by causing glandular atrophy.

3. Benedek, T.: Ueber Schizosaccharomykose (Spalthefemykose); Uebertragungsversuche, Histologie, Therapie, Arch. f. Dermat. u. Syph. **157**: 483-504, 1929; Schizosaccharomycosis, Arch. Dermat. & Syph. **24**: 557-(Oct.) 1931.

4. White, C. J., and Swartz, J. H.: Cryptococcosis Epidermica, Arch. Dermat. & Syph. **18**: 692-705 (Nov.) 1928.

5. White, Cleveland: Superficial Yeast Infections of the Glabrous Skin, Arch. Dermat. & Syph. **18**: 429-438 (Sept.) 1928.

6. Mitchell, J. H.: Amycotic Dermatoses Simulating Ringworm and Erosio Interdigitalis Blastomycetica, Arch. Dermat. & Syph. **19**: 659 (April) 1929.

7. Ravaut, Rabeau, Longhin and Koang: Streptococcal Intertrigo of the Retro-Auricular and Axillary Folds, Secondary Eczematides on the Thorax, Bull. Soc. franç. de dermat. et syph. **37**: 561 (May) 1930.

8. A "parchment" palm may, however, sometimes be moist from neurogenous sweating or hyperhidrosis.

3. The seborrheic factor, when present in an eczema, involves (*a*) a tendency to distribute the eruption to the scalp, the skin behind the ears, the forehead, the alae of the nose, the nose itself, and the presternal and interscapular regions; (*b*) an oiliness, shininess and greasiness of the skin; (*c*) a tendency to blackhead or comedo formation and to acne in the regions named; (*d*) a tendency toward fine yellowish greasy scales which leave oil spots on cigaret paper when allowed to remain in contact for a few minutes.

The presence of a seborrheic factor means the following for treatment: (*a*) a positive requirement for a sharp reduction of carbohydrate intake in the diet, for the process is apparently closely bound up with the carbohydrate storage mechanism and metabolism of the skin; (*b*) a good tolerance of sulphur, which is almost a specific in seborrheic processes when properly used; (*c*) a distinct indication for the use of x-rays, but by experts only, to accomplish a reduction of the activity of the sebaceous glands, which constitutes a fundamental attack on the pathologic mechanism, but one requiring both caution and experience; (*d*) a requirement to treat the scalp, the stronghold of seborrheic processes; (*e*) a relatively good prognosis if there are not too many other factors.

4. The pyogenic factor in an eczematous picture is identified by (*a*) the hereditary predisposition both to pyogenic and to seborrheic processes, for the two are closely linked, probably through the carbohydrate metabolism of the skin; (*b*) the presence of pustules, of impetiginous crusting, of combinations of furuncles, large or small, with oozing and crusting dermatitis (the so-called acute infectious eczematoid dermatitis of Engman and Fordyce), although in some cases the process may be chronic and scaling; (*c*) a close association with seborrheic tendency; (*d*) a high carbohydrate intake; (*e*) paronychial lesions of the fingers; (*f*) auto-inoculability in some cases.

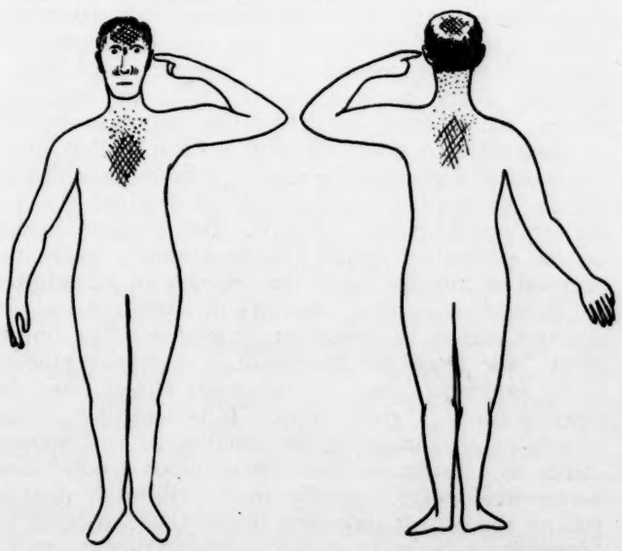

Fig. 2.—The distribution landmarks of the seborrheic or "oily skin" component in the etiology of "eczema." An oily, shiny forehead, nose and paranasal skin, dermatitic involvement of the ears, presternal and interscapular regions, and dandruff or itching of the scalp with early loss of hair or marked oiliness, suggest a seborrheic factor in an eczema. "Enlarged pores," blackheads, acne lesions and acne scars are a frequent accompaniment of the seborrheic habitus.

From the standpoint of treatment, the pyogenic factor predicates (*a*) response to mildly antiseptic solutions and wet dressings such as 1:4,000 potassium permanganate; (*b*) an indication for the use of ammoniated mercury ointments, weak at the outset; (*c*) the importance of controlling scratch and other auto-inoculative influences; (*d*) the necessity for a sharp reduction in carbohydrates, which presumably feed the organisms; (*e*) some merit in vaccines; (*f*) an indication for the extremely cautious use of

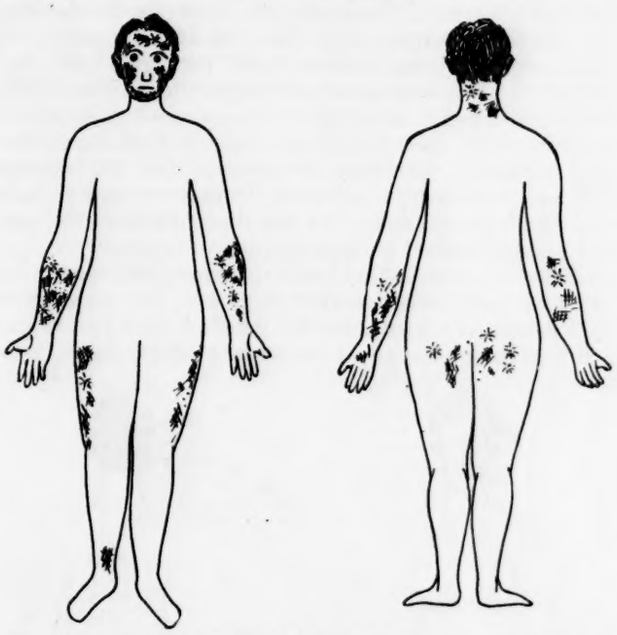

Fig. 3.—The "pyogenic" localization to friction points in a dermatitic or "eczema" picture. The typical example is infectious eczematoid dermatitis, a mixture of oozing or pus-crusted dermatitis, and pustules or furuncles. While less clear cut than other localizations and often involved with the seborrheic factor, pustules and pus crusting usually assist in identifying this component in an "eczema" complex.

x-rays, dependent on the coincidence of a seborrheic element; (*g*) a probable good effect from surface use of ultraviolet radiation; (*h*) a usually good but sometimes guarded prognosis, so far as the pyogenic element is concerned, the latter owing to the possibility of a combination with allergic susceptibility which is most intractable.

5. The mycotic factor in an eczema appears, as previously indicated, perhaps more strikingly in the distribution than in any other one characteristic. One is obliged at times to make a clinical diagnosis, with good therapeutic results, on the basis of distribution alone in the absence of confirmatory evidence from the finding of the fungus by microscopic examination or culture. In fact, the whole fungus problem as it concerns the etiology of dermatitis is in anything but a scientific state of order and calm. The seborrheic question and its fungus relations is an armed camp. At the meeting of the British Association of Dermatology and Syphilology in the summer of 1930, of two notable papers, by Barber [9] and by MacLeod,[10] the former described the differences between three conditions of the hands and feet which the ordinary man could not distinguish, in one of which fungi appear (dermatomycosis); in the next staphylococci (acrodermatitis continua), and in the third, nothing. MacLeod, after a masterly presentation of the moniliases of the skin, was followed in discussion by the distinguished Bloch [11] of Zurich, who pointed out

9. Barber, H. W.: Acrodermatitis Continua vel Perstans (Dermatitis Repens) and Psoriasis Pustulosa, Brit. J. Dermat. **42**: 500-518 (Nov.) 1930.

10. MacLeod, J. M. H.: Skin Diseases Due to Monilia and Other Yeastlike Fungi, Brit. J. Dermat. **42**: 549 (Dec.) 1930.

11. Bloch, Bruno: Some Remarks on Infections of the Skin by Monilia and Other Yeast-Like Organisms, Brit. J. Dermat. **42**: 569, 1930.

that monilia-like fungi were normal residents of the skins of healthy persons (twenty-two positive cultures in twenty-four persons), and that until something was known about the normal, little could be said about the pathologic condition. Monilia infections undoubtedly exist and involve special susceptibilities on the part of the victims. The borderline between the eczemas of mycotic origin and the unsolved mystery of psoriasis may perhaps even break through in the next decade or two into the common ground of the monilia infections, which resemble psoriasis quite strikingly in certain cases. It is therefore no absolute offense against the ordinary decencies of practice for the average physician not to take scrapings from every pair of itchy toes or blistered soles, for the distribution is the main factor in practical clinical diagnosis even today.

Like the cocci, the fungi produce sensitization or allergic manifestations that pass with the majority of physicians as eczema, and of which I shall speak presently. Fungi are also known to invade both the blood

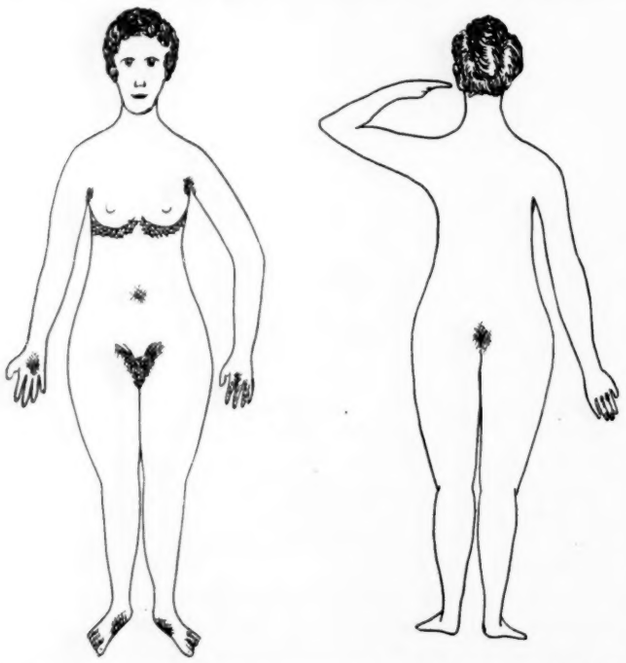

Fig. 4.—The intertriginous or contact surface distribution trend of the mycotic or fungus factor in "eczema" etiology. The interdigital, palmar, plantar, inguinal and anal cleft involvements are especially familiar in epidermophytosis or "athlete's foot," "gym itch," and the like. The involvement of the ears, axillae and submammary regions in women forms part of the so-called eczematoid parakeratosis of Herxheimer, in which Ravaut has recently identified both a streptococcal and a sensitization factor, superposed on the mycosis.

stream and the lymph nodes, and fungus infections may lead to grave consequences, altogether out of keeping with the famous proprietary's simplified "athlete's foot." I crossed the Atlantic last summer for example, with a prominent man who had lost both legs at the thigh from something that his surgeons would never have recognized as a complication of the commonest fungus infection of the skin. I was asked the other night what had become of gout, dermatologically speaking, and was able to tell the inquirer at once that in Philadelphia, at least, it belonged among the mycoses, being probably identical with streptococcal cellulitis of the foot and leg, gaining entrance through a mycotic or ringworm fissure between the toes.

In treatment, the identification of a mycosis means the following things: (*a*) It adds an element of refractoriness and a tendency to relapse, to the prognosis, for if a dermatologist is honest with himself, he must admit that certain common mycoses rarely are really cured. (*b*) It calls for a reduction of carbohydrates, for there is a good deal of clinical experience back of the belief that, as in the case of pyogenic organisms, a carbohydrate storage or metabolism quirk involving the skin (or perhaps a vascular factor by way of encouragement of Welch organisms under certain conditions in the intestine) feeds the fungi and encourages them. (*c*) Reduction of elements of nervous strain is essential in a proportion of cases, and some patients with fairly obvious mycoses or mycotic-looking dermatitis will not recover without mental as well as physical rest. (*d*) A local treatment regimen can almost be standardized, so far as the practitioner's management is concerned, on daily potassium permanganate solution soakings (1 : 4,000 to 1 : 8,000 strength); 2 per cent ointment of ammoniated mercury, if pustular; 2 per cent salicylic acid and 4 per cent benzoic acid, if dry and keratotic; 3 per cent salicylic acid in alcohol or the Castellani carbolfuchsin paint, if quiescent; and, if persistent, thorough mechanical removal (gently, though) of all detritus, which carries the organism. It is on this last point that the physician and patient most often fail. For the expert, in the refractory relapsing or difficult case, the judicious use of x-rays is indispensable, but, unfortunately, too often fails of permanent help because too little attention has been paid coincidentally to the background. Trichophytin, now being advertised, is, in this country especially, an adventure into immunotherapy that is not without question both as to results and to dangers.

6. The focal intoxication factor introduces the remaining group of etiologic components, for which it is impossible to speak with the definiteness of the topicalized discussion thus far. The facts are inescapable, but their modus operandi is obscure. A focus of infection with pyogenic organisms, for example, does exercise a marked exaggerative effect on many eczemas. One of the best examples is the sinus flare in the course of a typical eczema-asthma syndrome, which occurs in the case of the skin, just as intercurrent sinus infection affects asthma and chronic focal pneumonitis. Very possibly the effect is an aspect of allergy, the infection rendering the tissues susceptible or permeable to their allergens. Cleveland White [12] has recently suggested the reverse process, in which an allergic susceptibility provides a traumatized site for the onset of a mycotic infection. But whatever it may be, the spectacular results that occasionally follow the removal of infected teeth, the drainage of an infected gallbladder and similar measures in chronic refractory eczemas cannot be denied or concealed. The unfortunate side from the standpoint of everyday practice is the unpredictability of such good effects from the clearing up of a given focus. It is sometimes better to rely on overbalancing the complex of predisposing causes in a favorable direction by other general measures, which may help the focus indirectly, than to remove the patient piecemeal in the effort to reach his "focus."

Focal intoxication or sensitization effects are recognized now as occurring on the skin at a distance in connection with both pyogenic and mycotic foci in certain sites. A typical mycosis such as "athlete's foot," when pronounced, may give rise to eczematoid dermatitis of the face and trunk, in which it is contended no organisms are found, and which is regarded as a

12. White, Cleveland; and Taub, S. J.: Sensitization Dermatoses of Nonfungous Nature Following Superficial Fungous Infections ("Ringworm") of the Extremities, J. A. M. A. **98**: 524 (Feb. 13) 1932.

sensitization eruption that will not clear up until the primary focus is controlled or cured. It remains to be seen whether these and other so-called dermatophytids are really sensitization phenomena, with no fungi present; whether they are produced by secondary invaders such as staphylococci and especially streptococci, taking root on a sensitive but not necessarily specific background, as Ravaut has suggested; or whether they are inhabited by a modified noncultivable form of the original organism (Weidman,[13] MacKee,[14] Peck[15]) or perhaps even an ultramicroscopic pleomorph. In practice, therefore, it is necessary to clear up focal pyogenic and mycotic infections as a means of dealing with refractory eczemas. In certain chronic eczemas of the ankles, legs, forearms and backs of the hands, the focal sensitization is so important that nothing can be accomplished until it is identified and cleared up. In my own experience, however, the matter is rarely so simple as this, and one is obliged to go into the entire complex of causes as I have described it, before lasting results are obtained. Widowed women in middle life, for example, are the victims of an eczema involving the ears, axillae, groins and mammary folds (the so-called eczematoid parakeratosis of Herxheimer or streptomycotic levurid of Ravaut) which furnishes the best or rather worst examples of this problem, in my experience.

7. The metabolic factor I mention only to indicate that it is of little real help in most cases either to suspect it or to try to do anything about it. Obvious hypothyroidism rarely produces eczema, though the dry skin may have some influence in predisposition. As a rule, thyroid therapy is abused in these patients, who are often ichthyotic and made to sweat by the medication and to appear momentarily better under what might be dubbed an "endocrine summer." The carbohydrate metabolism is almost undoubtedly involved in many eczemas, but it is the local metabolism of the skin, as portrayed in the studies of Folin,[16] Urbach[17] and Pillsbury[18] rather than the general metabolism that is at the bottom of the picture. Hence blood sugar determinations have little meaning. Pituitary, ovarian and even splenic medication are not conspicuously promising just now, though the latter has been praised in spite of erratic and unduplicable results. The influence of pituitary hormone and calcium is on the calcium metabolism, which is in some way involved in all dermatitis, for calcium is the physiologically sedative side of the metallic ion balance in the skin.[19] As the calcium content of the skin goes down, potassium rises, and with it rises the irritability of the tissue. This does not, however, refer to blood calcium determinations which a physician may be tempted to demand for his patient if he does not realize their futility. The calcium intake is tied up definitely with the hydrogen ion concentration of the intestinal tract, and it seems to me more promising to influence the calcium metabolism here by the administration of calcium with coincident large doses of acid ions and a moderate dosage of ultraviolet radiation, than by pituitary therapy.

8. The crisp one-two-three quality of my earlier pronouncements fades still more as we enter Osler's famous penumbra of doubt, to grope through the twilight of cutaneous allergy toward the supposed stygian blackness of dermatologic neuropsychiatry. Allergic phenomena invade the problem of eczema from every direction. It will be noted that I have no diagram of the distribution of allergic eczema, for there is no distinctive clinical picture assignable to this factor, which enters each situation by different or multiple portals, depending on the case. A patient in whom a simple allergy or two appears, such as a dentist with procaine sensitiveness, will have an occupational distribution of lesions to the exposed surfaces, Furs will involve the neck, hair dyes the scalp, face and neck, formaldehyde the fingers, and ivy the fingers, legs, eyelids and penis. A good deal of clever detective work must be done in following allergic dermatitis to its excitant agents. It is said of Oliver,[20] for example, that he hit on the rotogravure ink dermatitis by observing the Monday morning flare ups exhibited by his first patient and tracing them to a Sunday event—the reading of the newspaper supplement. But a far different problem presents itself in those patients whose allergies involve ingested foods and are thus dependent on the ups and downs of the movement, the secretions and the bacterial content of the gastro-intestinal tract, to say nothing of its permeability in varying states. These questions Pillsbury and I[21] have more fully discussed elsewhere. They depend on such still controversial items as the liberation and absorption of histamine under conditions of diet which favor Welch

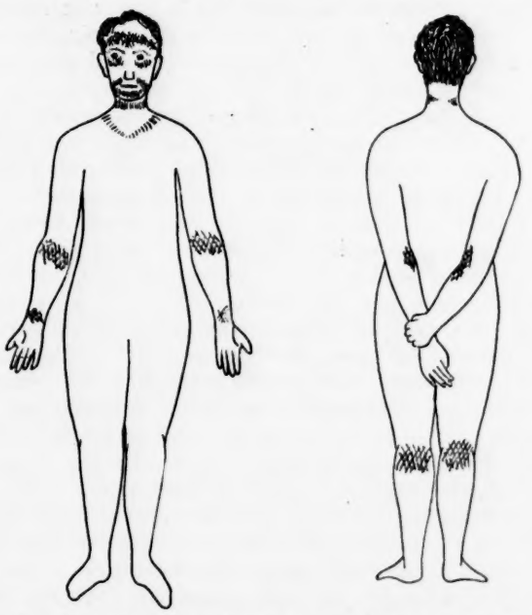

Fig. 5.—The distribution landmarks of the "diathetic," "neurogenous" or "asthma-eczema" complex. The sites of major involvement are the forehead, skin about the eyelids, mouth and chin, the creases of the neck and suprascapular region, and the flexures of the elbows, wrists and popliteal spaces. Of these the flexural involvement is the most distinctive. The skin rapidly becomes thick, leathery, and cross-striated (lichenification).

13. Weidman, F. D.: Laboratory Aspects of Epidermophytosis, Arch. Dermat. & Syph. **15**: 415-450 (April) 1927.
14. MacKee, G. M., and Lewis, G. M.: Keratolysis Exfoliativa and Mosaic Fungus, Arch. Dermat. & Syph. **23**: 445-471 (March) 1931.
15. Peck, S. M.: Epidermophytide in der Form Post-scarlatinöser Schuppungen an den Händen, Klin. Wchnschr. **8**: 1357-1358 (July 16) 1929.
16. Folin, Otto; Trimble, H. C., and Newman, L. H.: The Distribution and Recovery of Glucose Injected into Animals, J. Biol. Chem. **75**: 263-281 (Oct.) 1927.
17. Urbach, Erich; and Sicher, Grete: Der Zuckergehalt der Haut unter physiologischen und pathologischen Bedingungen, Wien. klin. Wchnschr. **41**: 1481-1482 (Oct. 25) 1928.
18. Pillsbury, D. M.: The Intrinsic Carbohydrate Metabolism of the Skin, J. A. M. A. **96**: 426-432 (Feb. 7) 1931.
19. Klauder, J. V., and Brown, Herman: Experimental Studies in Eczema: A Correlation of Potassium-Calcium Ratio in the Serum and in the Skin of Rabbits with the Irritability of the Skin, Arch. Dermat. & Syph. **20**: 326 (Sept.) 1929.
20. Oliver, E. A.: Rotogravure Ink Dermatitis, J. A. M. A. **91**: 870-874 (Sept. 22) 1928.
21. Stokes, J. H., and Pillsbury, D. M.: The Effect on the Skin of Emotional and Nervous States: III. Theoretical and Practical Considerations of a Gastro-Intestinal Mechanism, Arch. Dermat. & Syph. **22**: 962 (Dec.) 1930.

organisms high in the intestinal tract [22] with secretory activity and motility that may be dependent on a variety of structural and above all functional influences, the latter involving the nervous system, and perhaps calcium absorption dependent on the intestinal p_H.[23]

So far as treatment is concerned, the problem of the patient allergic to a single substance or two is simple, and avoidance with probable ultimate desensitization, natural or induced, is the procedure to follow. But the situation of the patient who has a complex allergic pattern, multiple substances including such unescapable generalities as house dust, wool and wheat, is a difficult and often a critical one. Of such material the "diathetic" patients are made, whose multiple and perhaps fluctuant sensitivities are the expression of fundamental inborn tissue instability, in many cases irremediable. The linkage in behavior of the allergic and the neurotic elements in these patients is one of the fascinating problems of eczema, as it is of asthma, and is much too long a matter to discuss here. The following appeal to me as some practical suggestions on allergy as a factor in eczema: (*a*) An allergic person who is not coincidentally "diathetic" does not have a necessarily bad prognosis; (*b*) allergies must be tested for thoroughly, by an expert, if there is a pronounced family history; but when local factors seem predominant the most important method of testing for allergic reaction as a cause of dermatitis is by means of the all important patch test. This consists in applying the whole substance suspected, under an impervious cover of tracing paper and adhesive plaster, to the unabraded skin, for from twenty-four hours to several days. The reaction should be read on removal and again after twenty-four hours (it may not be positive until then); (*c*) when allergic susceptibility appears, the removal of the offending substance must be complete, and the most detailed instruction may be required on the technic of doing this, especially with foods and room contacts; (*d*) allergic response goes up and down with the responsiveness of the sympathetic nervous system to fatigue and irritation, and no attack on it will be complete without attention to the matter of rest.

9. The neurogenous component in eczema may influence the origin and course of any form of dermatitis, as an excitant, but more often as a predisposing cause. The influence of the emotions, for example, is just coming into its own in appreciation as an etiologic agent. It can operate through a variety of physical mechanisms, of which the gastro-intestinal tract is one of the best understood. A mycosis may even be influenced by the stock market, and eczema by a course in French. The tendency to mechanistic training of the medical student, the premature substitution of an occasionally unripe bottle-and-test-tube science of medicine for centuries of the art, have momentarily led to an undervaluation of these influences in the behavior of the body. They are peculiarly potent, as Sack [24] has pointed out, in the skin, which is the organ occupying perhaps the largest single place in consciousness, having the widest and most varied sensory appeal and the richest vasomotor and other nerve supply in the body. It is impossible to deal effectively with eczema, especially in the securing of permanent as distinguished from relapsing and temporary results, without some regard for the neurogenous factor. Attention to it repeatedly makes all the difference between success and failure.

10. The final component in the behavior of an eczema is what I have for convenience called the diathetic make-up, which includes and in fact transcends what Becker [1] has well named "neurocirculatory instability." One might call it "neurodermobronchionasomucosal instability" without having named all the elements involved. This state of inborn tissue lability and hyperirritability is hereditary in character. It appears in stocks that seem to me to have been subjected to the effects of overcivilization. I might also say that American civilization seems particularly, with its undercurrent of restless hurry, to predispose to it. The "American colon" is perhaps one of its aspects. In comparing American dermatologic practice in the field of dermatitis with that of Europe, it would seem as if neurodermatitis, negative to sensitization test procedures, occupies a much larger place on this side of the Atlantic than on the other. This, however, is but impression.[25] There is no escaping the way in which, from the painstakingly collected family histories of these patients, neuroticism, instability, allergy and the repeated appearance of eczema, asthma and hay fever stand out as a constitutional trend. The identification of such a history in a patient with an eczema is therefore of unfavorable prognostic significance. The skin of such patients will explode under nervous and mental pressure, react easily to infections, be disturbed by allergic susceptibilities, or itch on small provocation, with the lichen reaction or leathery thickening following, not preceding, the subjective sensation. When the diathetic trend is well developed, the process is one that began in infancy. It is complicated, so far as the skin is concerned, by one or all the other factors that I have described thus far and that led me to speak of some diathetic eczema patients as examples of heredo-ichthyo-pyogenic-allergic-neurogenous eczema. Such patients are among the most unfortunate of mortals, too often doomed to a lifetime of semi-invalidism, stifling the highest hopes and the keenest aptitudes and accomplishments in one's entire clientele. Clinically, diathetic or asthma-eczema has certain well defined earmarks. The typical distribution appears in figure 5, and special emphasis should be placed on the flexural involvement, which is always a source of foreboding with me when I recognize it in a patient. The second distinctive characteristic is the pale strich, or stroke, reaction. The skin turns white instead of red, when scratched or stroked, a supposedly sympathicotonic reaction sometimes called "white dermographism." The third clinical characteristic is the personality, which I have described elsewhere, and which is as essential an element in diagnosis and treatment as any papule, vesicle or salve. The diathetic child is ceaselessly active, precocious, assertive, egocentric to a degree obtrusive even for the egocentric age. But this period of free expression of the inward excess energy and irritability may be soon replaced, depending somewhat, I think, on the bringing up, by a peculiar still repression. I have seldom seen any of my patients so motionless, so sphinxlike, as the poker-faced diathetic patient. A birdlike alertness usually peers from the quick eye, but the face is masked, not alone by the tendency to leathery thickening but by the expressionlessness of neuromuscular tension,

22. Kendall, A. I., and Schmitt, F. O.: Physiological Action of Certain Cultures of the Gas Bacillus, J. Infect. Dis. **39**: 250 (Sept.) 1926.

23. Irving, L., and Ferguson, J.: The Influence of Acidity in the Intestine on the Absorption of Calcium Salts by the Blood, Proc. Soc. Exper. Biol. & Med. **22**: 527, 1925.

24. Sack, W. T.: Psychotherapie und Hautkrankheiten, Dermat. Wchnschr. **84**: 16 (Jan. 1) 1927.

25. Compare Sulzberger, M. B., and Mayer, R. L.: Sensitizations: Regional, Seasonal, Dietary, and Other Influences Accounting for Variations and Fluctuations, Arch. Dermat. & Syph. **24**: 537 (Oct.) 1931.

muscularly controlled, if I may so describe it. When at rest, these patients do not "bat an eye." They are the opposite of the jerky, constantly moving, blinking vagotonic patients, who have a much better background and prognosis. The flush of the diathetic face may come and go, but usually under the sallow brown of hyperpigmentation, only the eyes peer out, as through "holes burnt in a blanket." In motion, a diathetic patient is also quite distinctive. The fixity at rest is, I believe, an unconscious pose, a sort of pseudo-rest, masking their tension, and in action there is often a ginger, a snap, that bespeaks a high nervous energy expenditure.

Diathetic patients give a history of most or all of the following characteristics: (*a*) climatic or seasonal beneficial response; to summer, to seaside, to sunshine and occasionally, like asthmatic patients, to altitude; (*b*) alternations of eczema and asthma, or combinations of the two; (*c*) response to change, of environment and of medication, especially to changes of physician, salve and scene, regardless of merit; (*d*) reaction to focal and intercurrent infections, especially respiratory, and hence almost always worse in winter; (*e*) sharp, pyogen-allergic reactions to impetiginous infections, with fever and a cutaneous pustular explosion; (*f*) suggestions of an endocrine dysfunction, too indefinite to treat specifically, including slightly subnormal basal metabolic rate, low sugar tolerance, irregular menstruation; (*g*) numerous but completely miscellaneous biochemical abnormalities to which it is impossible as yet to attach a final interpretation that has treatment value; (*h*) multiple allergic patterns, ranging through five to twenty substances, bearing little relation to the daily life, sometimes helpful in treatment and just as often not, and apparently subject to shift, rise and fall, with the nervous and general state of the patient, including his reaction to infections and to rest. It should be emphasized that routine internist's examinations, blood counts and blood chemistry determinations, and basal metabolism tests, to the expense of which diathetic patients are constantly being subjected, are a waste of time and money, and usually send patient and physician barking up the wrong tree—notably that of thyroid and other endocrine medication.

The recognition of a diathetic element in an eczema involves a series of complex treatment problems, based on the unraveling of the relative proportions of the various elements from numbers 1 to 10 which I have named as contributory to the complex of eczema. The full-fledged picture of the heredo-ichthyo-pyogenic-allergic-neurogenous eczema is a pitiable and ultimately incurable one. As one is able in less complicated cases to pick out an ichthyosis to treat with grease and soaplessness, a seborrheic element that will stand sulphur and limitation of carbohydrates, a pyogenic phase, perhaps temporary, that needs ammoniated mercury, vaccines and x-rays, treatment may produce strikingly good results. If sensitization tests indicate an allergic phase simple enough so that the patient does not need to move to a treetop to escape house dust and feathers, wrap himself in papers in his solitude, to escape wool, silk and furs, and forsake domesticity because some patch-enthusiast finds him sensitive to his wife's hair, a certain amount of ground can be gained by the necessary exclusions. If one has the time, foregoes the profits and meets with the intelligent response that makes psychotherapeutic measures possible, still more may be accomplished. For all diathetic eczema patients, however, the practitioner, recognizing the situation, can apply certain most useful remedies: rest, sunlight and bathing; in a pinch occasional travel and change; avoidance and prevention of infections, especially respiratory; large doses of calcium and dilute hydrochloric acid in milk or orange juice; small doses of ephedrine and phenobarbital, and bland ointments with mild tars, including crude coal tar. Of all local applications, variety and optimism are essential elements.

SUMMARY

1. My purpose in this paper is to present a summary of the ten or more component factors that make up the etiologic background of "eczema" as commonly understood in American practice.

2. A stripped examination reveals certain types of distribution which are helpful in identifying the influences at work in producing a given clinical picture.

3. A painstaking study of the patient's history and of familial and hereditary elements further contributes to diagnosis and prognosis. Of especial importance are the ichthyotic, seborrheic and pyogenic trends and the neurogenous and allergic background.

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ANTIDOTES FOR STRYCHNINE POISONING *

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Recently Aikman [1] has called attention to the importance of strychnine as a cause of fatal poisoning in children. He adds three cases to the long list of fatalities already attributed to this alkaloid. Statistical studies [2] on the subject indicate further that strychnine is the commonest cause of poisoning among children. In most instances the strychnine is obtained from sugar-coated cathartic or tonic pills purchased by adults for their own use but carelessly left within the reach of children. This source of poisoning can eventually be eliminated by legislation against the dispensing of strychnine in this form. Time will be required, however, to bring about this change, and in the meantime accidental fatalities will continue. There will always be the occasional cases of accidental or intentional poisoning among adults.

The methods of treatment for strychnine poisoning now in use are apparently not very effective. They consist of emetics or the use of the stomach tube for the recovery of unabsorbed strychnine; but because the latter procedure precipitates convulsions, it is frequently necessary to anesthetize the patient while it is being carried out. Treatment is then directed toward the control of convulsions to avoid fatal asphyxiation or exhaustion, and to this end antispasmodics and volatile anesthetics are commonly employed. The anesthetics, however, are prone to cause respiratory failure when given in amounts sufficient to control convulsions; their use is thus attended with some risk. Morphine is said to augment rather than to allay convulsions.

In experimental investigations of strychnine poisoning, Githens and Meltzer were able to save dogs that

* From the Laboratory of Applied Physiology, Sheffield Scientific School, Yale University.

1. Aikman, John: Strychnine Poisoning in Children, J. A. M. A. **95**: 1661 (Nov. 29) 1930.

2. Statistical Bulletin, Metropolitan Life Insurance Company **6**: 1-2 (April) 1925.

had received twice the surely fatal dose by the employment of anesthesia, intratrachial insufflation and the injection of salt solution. Fardera and Gentilucci, and also Osterwald found that rabbits and guinea-pigs would survive one and a half times the fatal dose if they were allowed to inhale oxygen. Neither of these methods has come into any general use.

The experimental work reported here was carried out mainly on rats, with a few additional experiments on dogs. The method of procedure was such as to allow simple graphic representation of the observations. The successive rats in a series were given increasing doses of strychnine varying from a nonfatal amount up to five times the amount ordinarily fatal. The antispasmodic drug under study was also administered but in a uniform amount throughout the series. Thus the only variable was the strychnine. The dose of antispasmodic drug, however, was different for each separate series of rats. Thus the series themselves provided the second variable. The procedure was in principle one of titration in which the death or recovery of the rat served as an indicator of the effectiveness of the antidote.

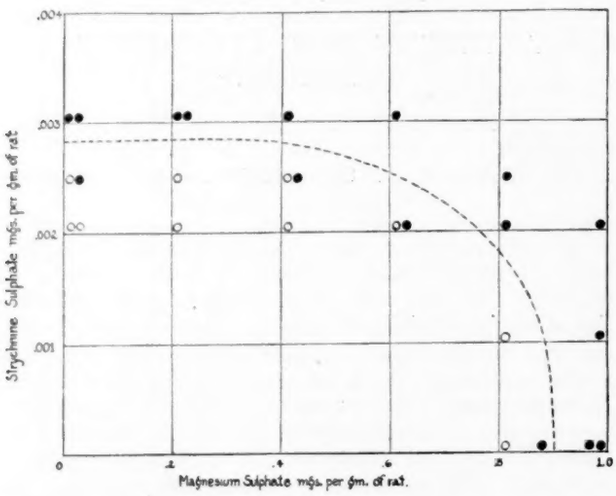

Chart 1.—Magnesium sulphate administered to rats poisoned with strychnine: The rats represented by the black dots died; those represented by circles lived. The dose of strychnine and apomorphine given any one of the rats is indicated by the points on the abscissa and ordinate corresponding to the rat. Magnesium sulphate is not an antidote for strychnine.

EXPERIMENTS WITH MAGNESIUM SULPHATE AS AN ANTISPASMODIC

The results obtained with the use of magnesium sulphate are given in chart 1. The observations are essentially the same as those of Underhill and Wood [3] but, since in their experiments the strychnine was administered intramuscularly, their doses are somewhat larger than those reported here, which were given intraperitoneally. In this series of experiments the magnesium sulphate was administered before the strychnine was given. It was necessary to do so in the rats because the extremely rapid action of large doses of strychnine on these animals allowed no time to make subsequent administrations; administration of two or three times the surely fatal dose was followed by convulsions and death in from three to four minutes, and thus often before the antidote could be given. The action is slower in large animals; two or three times the lethal dose produces death in from fifteen to thirty minutes in dogs and after a much longer time in human beings. The difference in time depends on the more intense metabolism and more rapid circulation in small as compared with large animals.

In the experiments recorded in chart 1, twenty-three rats were injected intraperitoneally with amounts of strychnine varying from 0.001 to 0.004 mg. per gram of body weight. About half the rats given 0.0025 mg. per gram died; the others recovered. All those given less than 0.0025 mg. per gram recovered, and all those given 0.003 mg. or more per gram died. Therefore, 0.003 mg. per gram of rat was taken as the absolutely lethal dose. Magnesium sulphate solution injected intraperitoneally causes unconsciousness in rats in doses of 0.8 mg. per gram of rat and death in doses of 0.9 mg. or over. As seen in chart 1, the use of magnesium sulphate did not diminish the toxicity of strychnine nor did strychnine diminish the toxicity of magnesium sulphate.

USE OF APOMORPHINE AS AN ANTISPASMODIC

The use of apomorphine as an antispasmodic in strychnine poisoning was suggested by Dr. James S. Martin of Waterbury, Conn., who has used this drug successfully in three cases of strychnine poisoning. Dr. Martin has kindly allowed us to present the data from these cases:

CASE 1.—A child, aged 4 years, had swallowed an indefinite quantity of tablets of strychnine sulphate. Convulsions had started about one hour before medical treatment commenced. At the time of observation, convulsions were of extreme severity, with opisthotonos. Attempts to inject chloral hydrate by rectum started a convulsion, and the liquid was ejected violently. Death seemed imminent from respiratory failure.

One-tenth grain (6.5 mg.) of apomorphine was injected subcutaneously, and this procedure precipitated a violent convulsion, followed a minute later by one of less severity. At the end of three minutes, sweating commenced; the patient relaxed. During the next ten minutes there were a few spasmodic movements, but these passed off and there were no further convulsions. The patient did not vomit.

CASE 2.—A woman, aged 23, took strychnine with suicidal intent, as was later stated " a whole boxful" of one-thirtieth grain (2 mg.) tablets. Convulsions were well marked when medical treatment was commenced. A tap on the side of the bed was followed by a violent convulsion, accompanied by loud expiratory grunts, bursts of flatus and discharge of urine. There was extreme opisthotonos.

One-fifth grain (13 mg.) of apomorphine was injected subcutaneously, and precipitated a convulsion. As in the first case, sweating and relaxation followed; some spasmodic movements continued for one hour. One-tenth grain of apomorphine was then given. There were no further convulsive movements. The patient did not vomit. She recovered fully.

CASE 3.—A boy, at boarding school, in a fit of despondency decided to commit suicide. He stole from the school infirmary a bottle containing 100 one-tenth grain strychnine tablets. They were of the red sugar-coated variety. He carried them to his room, where he swallowed the entire hundred, washing them down with a glass of water. After sitting alone for twenty minutes, during which no symptoms of poisoning occurred, he decided that he had been mistaken in his choice of poison. He walked downstairs and took his place with the rest of the students in the study hall. Almost immediately he fell to the floor in a violent convulsion. A stomach tube was passed and a small amount of pinkish fluid was removed. Violent convulsions prevented any further attempt to wash out the stomach.

Fifteen minutes later, one-tenth grain of apomorphine was administered subcutaneously. The effect was the same as in the two cases previously cited. Twitching persisted for an hour and was controlled by the administration of an additional

3. Underhill, F. P., and Wood, E. C.: J. Pharmacol. & Exper. Therap. **36**: 129-153 (June) 1929.

one-tenth grain of apomorphine. The patient did not vomit. He recovered fully.

In commenting on these observations, Dr. Martin says:

The first case, I feel quite sure, would have terminated fatally without the use of apomorphine, as is quite probable in the last two cases also. In all three cases the action of the drug was spectacular. The almost immediate cessation of convulsions following the administration of the apomorphine left no room for doubt that it acted in a specific manner against strychnine.

EXPERIMENTS WITH APOMORPHINE AS AN ANTISPASMODIC

The antispasmodic and sedative effects of apomorphine have been observed by others,[4] and the drug has been used occasionally with these ends in view, but owing to its more striking action as an emetic it is used almost exclusively for that purpose.

Rats are unable to vomit, but following injections of apomorphine they exhibit actions indicating disturbance in the motility and secretion of the alimentary tract. After doses of from 0.033 to 0.066 mg. of apomorphine, they salivate freely and move their jaws in a constant chewing motion. They bite everything within their reach; they eat the feces in their cage and chew at their own tails or even tear skin from their bodies. At the same time the animals breathe violently, are restlessly active, turning in circles; but gradually the legs become stiff and their movements awkward. Paralysis develops, and death follows from doses of 0.13 mg., resulting from respiratory failure.

In testing apomorphine as an antidote for strychnine, the same procedure was followed as in the use of magnesium sulphate.

Chart 2 presents the results of experiments on twenty-nine rats given strychnine and apomorphine, thirteen given strychnine alone, and three given apomorphine alone. The use of apomorphine brought about

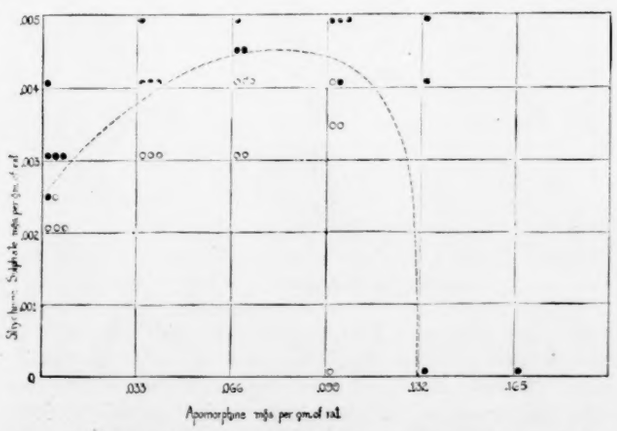

Chart 2.—Apomorphine administered to rats poisoned with strychnine: Presentation as in chart 1. Apormorphine is an antidote for strychnine, saving rats from death provided the dose of strychnine does not exceed twice the amount lethal for untreated rats. Strychnine does not act as an antidote for apomorphine.

recovery after the administration of slightly less than twice the fatal dose of strychnine. Strychnine, however, did not serve as an antidote to apomorphine.

Five experiments were performed on dogs to determine the effects of apomorphine in controlling strychnine convulsions in these animals. The lethal dose of strychnine for untreated dogs lies between 0.6 and 0.7 mg. per kilogram. The higher value was taken as the absolutely lethal dose. Intraperitoneal injection of this amount into one dog produced stiffness of the legs and arching of the back in five minutes, convulsions in ten minutes, and death in twenty-three minutes.

In a second dog treated in the same manner, stiffness and arching of the back developed in five minutes. At this time it was given 1 grain (0.065 Gm.) of apomorphine intraperitoneally. Dogs are less sensitive to apomorphine than are human beings, and doses as high as 3 grains (0.2 Gm.) can be tolerated. Strychnine convulsions did not develop in the dog. It vomited and for a half hour was restless, walking in circles. At the end of an hour the dog appeared normal but sleepy and thereafter did not show any ill effects from the drugs.

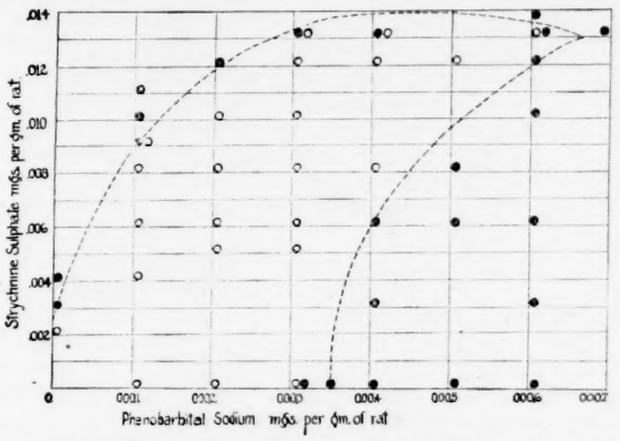

Chart 3.—Phenobarbital sodium administered to rats poisoned with strychnine: Presentation as in charts 1 and 2. Phenobarbital is an antidote for strychnine, saving rats after four to five times the amount lethal for untreated rats. Strychnine acts as an antidote for phenobarbital sodium, saving rats after twice the amount lethal for untreated rats.

A third dog was given double the absolutely lethal dose of strychnine (1.4 mg. per kilogram), and ten minutes later, when convulsions were definite and severe, 1 grain of apomorphine was injected intraperitoneally. The dog vomited and the convulsions ceased, but the dog remained hypersensitive to sensory stimulation for an hour, at which time this reaction disappeared and the dog appeared depressed but not otherwise abnormal.

The fourth and fifth dogs were each given three times the absolutely lethal dose of strychnine (2.1 mg. per kilogram). In both cases, extremely violent convulsions developed within two minutes. The convulsions were not controlled by the administration of 1 grain of apomorphine, and the animals died in nine and in twenty-three minutes, respectively, after the administration of strychnine.

EXPERIMENTS WITH PHENOBARBITAL SODIUM AS AN ANTISPASMODIC

Phenobarbital sodium has been used extensively as an antispasmodic in nervous disorders.[5] In testing phenobarbital sodium as an antispasmodic for strychnine convulsions, we followed the same procedure as that for apomorphine. The results, which are presented in chart 3, show that the lethal dose of phenobarbital for rats lies between 0.3 and 0.4 mg. per gram of rat. With less than a third of this lethal dose, recovery occurs after the administration of three times the absolutely

4. Neurol. Wchnschr. **29:** 501 (Nov. 5) 1927.

5. Schoenborn, S.: Fortschr. d. Therap. **6:** 178-180 (March 25) 1930. Baneriee, H.: Indian M. Rec. **50:** 115-117 (Feb.) 1930. Kogan, J. M., and Mirelson, L. A.: Ztschr. f. d. ges. Neurol. u. Physiat. **118:** 621-633, 1929.

lethal dose of strychnine, and with the minimal lethal dose of phenobarbital, recovery occurs after the administration of from four to five times the absolutely lethal dose of strychnine. Furthermore, with large amounts of strychnine, recovery occurs after the administration of twice the lethal dose of phenobarbital.

There is thus apparently a true antagonism between these two drugs; such was not the case with apomorphine, for strychnine did not induce recovery when the ordinary lethal dose of apomorphine was given.

To study further the antidotal properties of phenobarbital sodium in strychnine poisoning, five experiments were performed on dogs.

The first dog was given twice the absolutely lethal dose of strychnine intraperitoneally (14 mg. per kilogram) and, at the same time, 0.1 Gm. of phenobarbital sodium per kilogram. Convulsions did not develop; the dog was slightly hypersensitive to sensory stimulation, but in twenty minutes this effect had passed off and the dog become sleepy. It slept quietly for ten hours and awoke apparently normal.

The second dog was given an excessive dose of phenobarbital, 0.12 Gm. per kilogram. Within twenty-five minutes the dog was unconscious and could not be roused by violent shaking. At this point, three times the lethal dose of strychnine was given (2.1 mg. per kilogram) without any appreciable effect on the dog. The dog was still asleep forty-eight hours later, and for the following twelve hours was awake but dull. Its behavior returned to normal after eight hours.

The third dog was given 0.08 Gm. of phenobarbital sodium per kilogram and thirty minutes later four times the lethal dose of strychnine (2.8 mg. per kilogram). Five minutes later it had a slight convulsion and several others of short duration in the hour following. None of these convulsions were of sufficient severity to endanger the animal's life. The dog finally fell asleep, and the next day was weak but not otherwise abnormal.

The fourth dog was given 0.3 Gm. of phenobarbital sodium per kilogram. There was some delay in administering the strychnine, and the dog died of respiratory failure thirty-two minutes after the injection of the phenobarbital.

The fifth dog was given the same large dose of phenobarbital sodium as in the case of dog 4; five minutes later it was unconscious and in ten minutes respiration was apparently failing. Twice the lethal dose of strychnine was administered with immediate benefit. The dog was alive ten hours later but unconscious. The lethal dose of strychnine was given and this was repeated three hours later. Following the last dose—altogether four times the lethal dose of strychnine within twenty-four hours—the dog awoke and was able to stand. The following day it appeared normal.

CONCLUSIONS

1. Magnesium sulphate does not prevent or even diminish strychnine convulsions in rats. It is not an antidote for strychnine.

2. Apomorphine controls convulsions in rats and dogs. It allows recovery after approximately twice the lethal dose of strychnine, but not when the dose is three times the lethal amount. Strychnine does not antagonize apomorphine or even diminish its toxicity for rats.

3. There are reported three cases in which the use of apomorphine was followed by recovery in human beings who had taken persumably lethal amounts of strychnine.

4. Phenobarbital sodium controls strychnine convulsions in rats and dogs. Recovery follows the administration of five times the lethal dose of strychnine.

5. A true antagonism between the actions of phenobarbital sodium and strychnine is indicated. Rats and dogs that have received amounts of phenobarbital as high as three times the lethal dose may be saved by the administration of amounts of strychnine which by themselves would be fatal.

4 Hillhouse Avenue.

CHORIONEPITHELIOMA OF THE UTERUS

REPORT OF CURE IN YOUNG WOMAN PRESENTING EXTENSIVE METASTASES *

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AND
M. L. LEVENTHAL, M.D.
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Chorionepithelioma, because of its diverse and often misleading clinical and pathologic manifestations, is without doubt one of the most puzzling gynecologic conditions to prognosticate. This is the fact particularly because even expert pathologic diagnosis does not foretell the subsequent clinical course; tumors appearing relatively benign frequently run a rapidly fatal course, while tumors appearing virulently malignant may occur in patients making uneventful, complete recoveries. Much has been added in recent years to knowledge of the source, clinical course, and treatment of chorionepithelioma.

When the condition was first described, its true origin was unknown. Saenger,[1] in 1888, believed it to arise from decidual cells and therefore he employed the term "deciduoma malignum" or "sarcoma deciduocellulare." Marchand,[2] in 1898, was the first to discover the true origin of the tumor cells from the fetal villi, and he demonstrated the similarity of the cells to the syncytium and Langhans' cells. He divided the tumors into typical and atypical forms. On microscopic section the typical form presented a profusion of Langhans' cells intermixed with large syncytial masses, areas of hemorrhage and necrosis and invasion of blood capillaries. In this type there is a scant amount of connective tissue stroma and no new formed connective tissue or vessels—a very malignant form. The atypical form revealed fewer Langhans' cells and syncytium with more invasion of maternal elements as mononuclears, polynuclears and fibrous connective tissue. Though histologically correct, Marchand's description did not adequately classify chorionic tumors for a determination of prognosis and treatment. Ewing[3] has done much to correlate the pathologic with the clinical picture of chorionic tumors, and in 1910 he proposed three main types of the disease; namely, (1) chorio-adenoma, (2) choriocarcinoma, and (3) syncytial endometritis. The chorio-adenoma is distinguished by a much enlarged uterus, enclosing a bulky tumor, the structure of which represents an overgrowth of all the elements of the chorionic villi, connective tissue core, Langhans' cells and syncytium. Metastases are rare in this type. In choriocarcinoma, the uterus is normal in size or only slightly enlarged and harbors a small infiltrating tumor

* From the Gynecologic service, Michael Reese Hospital.

1. Saenger: Zentralbl. f. Gynäk., 1889, p. 132.
2. Marchand: Ztschr. f. Geburtsh. u. Gynäk. **39**: 173, 1898.
3. Ewing, James: Surg. Gynec. Obst. **10**: 366, 1910.

located at the placental site. The microscopic picture is analogous to the typical tumor of Marchand. Stroma is characteristically absent, showing a high degree of malignancy of the cells with ability to grow without the

Fig. 1.—Cut section of uterus showing the black hemorrhagic areas of chorionepitheliomatous tissue.

usual source of nutrition. Metastases are early and invariably present. In the group represented as cases of syncytial endometritis there is no well defined tumor, but the uterus is much enlarged and contains stroma infiltrated by syncytial wandering cells. Ewing considers this condition as a "regressive and inflammatory process." Chorio-adenoma usually follows hydatid mole, while choriocarcinoma follows normal labor promptly or after a long interval, abortion, ectopic pregnancy or retained placenta.

The following case is reported for two reasons: first, to record a case of chorionepithelioma of the uterus in an exceptionally young woman which though microscopically falling into Ewing's classification of choriocarcinoma with extensive metastases nevertheless was successfully cured by hysterectomy and roentgen therapy; and, secondly, to demonstrate the pitfalls in diagnosis, prognosis and treatment which attend chorionic tumors.

B. J., a woman aged 19, entered Michael Reese Hospital, Feb. 2, 1926, complaining of vaginal bleeding of two months' duration. One year previously she had given birth to a normal, full term child and had had an uneventful puerperium. The last menstrual period began, Oct. 8, 1925, and during the first week of December she suddenly began to bleed. The initial bleeding was free, lasting five days, and resembled a normal menstrual period. This active bleeding was then followed by spotting for several days, which was again followed by bleeding for seven days. Spotting occurred continuously, and for the week prior to admission there was profuse bleeding with large clots. The past medical and surgical history was negative. Menstruation began at 13 years of age and was profuse and irregular in occurrence, every four to six weeks. On admission the temperature was 99.4 F., pulse 88, respiration 20. General physical examination was negative. Bimanual examination revealed a slightly relaxed, intact perineum. The cervix was closed. The uterus was anteflexed, freely movable, free from tenderness and of the approximate size of an eight weeks' pregnancy. The tubes and ovaries were not palpable. Blood examinations on admission disclosed hemoglobin, 70 per cent (Tallqvist); red blood cells, 4,490,000; white blood cells, 9,700; sedimentation time, forty-five minutes; Wassermann reaction negative. The urine showed 1 plus albumin and a few leukocytes, microscopically. A tentative diagnosis of incomplete abortion was made.

Feb. 5, 1926, under ethylene anesthesia the cervix was dilated with Hegar's dilators to number 18, but no ovular or decidual tissue was found, either by digital exploration or with the curet. However, on the posterior wall in the region of the left cornu a firm, smooth convex mass was found about the size of a plum of the consistency of a fibroid. The vaginal bleeding continued after the curettage for several days and on February 12 laparotomy was performed. On the posterior wall of the uterus, extending from one horn to the other, a mass about 6 by 6 by 7 cm. was found. This mass was enucleated with great difficulty, part of the posterior wall, including the endometrium, being removed. The patient had given permission to remove only the tumor. The uterus was closed. The tubes and ovaries appeared normal. The right round ligament at the internal ring was found incorporated in a retroperitoneal inflammatory mass, about the size of the fist. The pathologic diagnosis of the tumor removed was chorionepithelioma of the uterus. Grossly the surfaces made by cutting showed blood clot and irregular, friable, grayish tissue. Microscopically, along the surface of one section was a layer of columnar cells typical of endometrial lining. The stroma beneath it was not dense; the cells were elongated and fibroblastic in type, with some edema. Deeper down the stroma cells were large and more spherical. Beneath this the myometrium was dense, irregular, isolated into bundles, and embedded in the bundles was an irregular squamous cell invasion. The cells were large, arranged in columns and sheets, and hyperchromatic nuclei and numerous mitotic figures were present. In one or two places there was hyalinization of clumps of these cells. The mass of the growth was necrotic and degenerated. Embedded

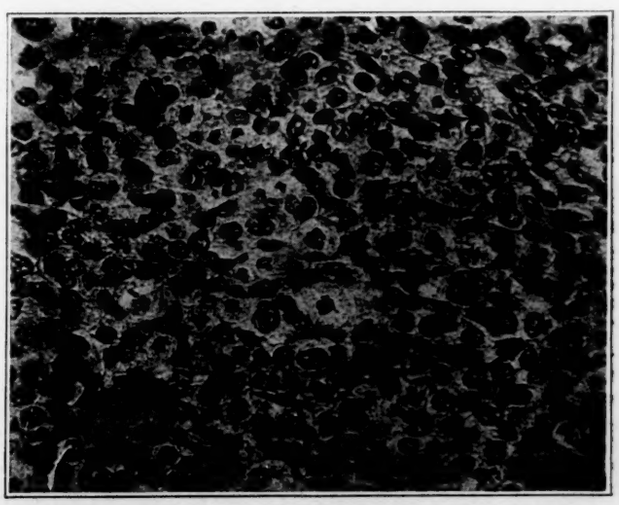

Fig. 2.—Characteristics of the tumor cells with many mitotic figures.

in it were clumps of the invading cells, which were quite hyaline and had dense nuclei. These cells were arranged without definite basement structure. With this diagnosis of a rapidly growing chorionepithelioma, high voltage roentgen therapy was instituted.

Four such treatments were given between March 1 and March 14. Vaginal bleeding, however, continued, and on March

17, blood examination revealed red blood cells, 2,800,000; hemoglobin 57 per cent (Dare); white blood cells, 4,800; sedimentation time, twenty-five minutes. March 21, the patient had a severe uterine hemorrhage, which necessitated vaginal packing and a blood transfusion. March 23, despite the packing, profuse uterine hemorrhage continued, and the patient was therefore brought to the operating room. She then had a pulse

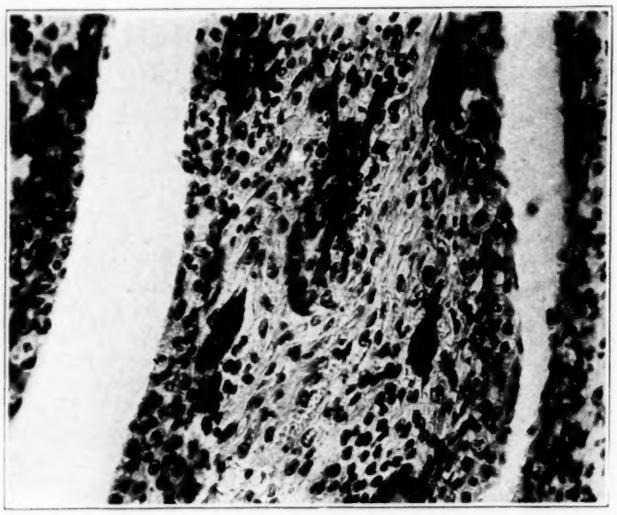

Fig. 3.—Masses of tumor cells invading uterine tissue.

of 160, and the hemoglobin was 20 per cent. After a preliminary blood transfusion of 500 cc. of whole blood a panhysterectomy was rapidly performed, and the patient was again given a transfusion. The uterus was found enlarged to the size of an eight weeks' pregnancy, was soft, and contained numerous grape-sized black nodules on the posterior wall. There were no evidences of metastases at operation.

Pathologic diagnosis of the specimen was chorionepithelioma of the uterus (fig. 1). Grossly, there was a hemorrhagic mass at the fundal end of the endometrial cavity with a soft necrotic center. A second mass almost the size of the uterus itself occupied the posterior wall of the myometrium. The surface was gray, deeply hemorrhagic, and the center necrotic and softened. A portion of the tumor infiltrated the myometrium and the peritoneal surface of the uterus had several small, subserous hemorrhagic nodules. Microscopically, the uterine cavity was lined by a thin endometrium which was infiltrated with leukocytes. The glands were few in number, short and widely separated. In two places a transition from endometrium into tumor tissue was seen and in another place a very thin layer of endometrium covered a large tumor nodule. The tumor tissue (fig. 2) was composed of large, irregularly polyhedral cells, which were not separated by intervening stroma and which formed large cellular areas. The nuclei of the tumor cells varied in size and in chromatin content; mitoses were unusually numerous. Many of the tumor cells were vacuolated. At the periphery, where the tumor tissue invades the myometrium, masses of multinucleated syncytium with deeply stained nuclei were formed (fig. 3). Similar masses of syncytial tissue were present within the masses of cellular tumor tissue. In several sections masses of tumor cells were found within blood vessels (fig. 4). The tubes and ovaries were free from tumor tissue.

April 10, after almost complete recovery from the operation, the patient developed a foul, bloody vaginal discharge. Examination revealed a bluish cyst on the anterior vaginal wall 4 cm. in diameter and a similar smaller mass on the posterior wall. April 17 there developed a cough with blood-tinged sputum. A roentgenogram of the chest interpreted by Dr. Robert Arens, our roentgenologist, revealed extensive bilateral pulmonary metastases. The patient, however, felt well. The vaginal metastases became smaller and gradually disappeared; as did the pulmonary lesions, after high voltage roentgen therapy to the chest. July 20 the patient was apparently cured, for there was no evidence of the metastases in the vagina or any abdominal metastases and roentgenograms of the chest were completely negative.

The patient has been seen at regular intervals for five years following the last operation and is in excellent condition.

COMMENT

As recently emphasized by Schmitz and Hueper, the typical malignant chorionepithelioma consists chiefly of an anaplastic growth of the cellular elements of the chorion (Langhans' cells and syncytium) with a characteristic deficiency or absence of the connective tissue core. This absence is due to the rapid proliferation of the cellular structures, which have many mitotic figures and exhibit marked vacuolation and necrosis with invasion and destruction of adjacent tissue. These authors state that the "highest potential malignancy seems to be conferred by the presence and activity of Langhans' cells." Ewing states that he has been unable to find any record of cure of malignant chorionepithelioma (choriocarcinoma) following operation, and most authors agree that choriocarcinoma ultimately destroys the life of the mother. Histologic examination of the tissue removed in our case fulfilled all the accepted requirements for the most malignant type of chorionic growth. So marked was the cellular structure in the first tumor mass which was removed that squamous cell carcinoma was the first pathologic diagnosis made by our pathologist, which diagnosis was changed to chorionepithelioma after the entire uterus was removed on restudy of the sections. These sections showed only little stroma, with a profusion of cells containing hyperchromatic nuclei and numerous mitotic figures, and without definite basement structure. Microscopic sections from the mass in the uterus after hysterectomy revealed no intervening stroma between the

Fig. 4.—Mass of tumor cells within a blood vessel.

large cellular areas. These sections showed syncytium at the periphery of the groups of anaplastic Langhans' cells. We therefore classify our tumor as one of choriocarcinoma as described by Ewing. Grossly, the large size of the uterus is the only finding that does not fit this classification. It is interesting to note that the first tumor mass removed contained more connective tissue structure than the second. The second was

probably a more advanced stage of the growth and more malignant than the first. The occurrence of vaginal and pulmonary metastases after hysterectomy was probably due to dislodging of fragments of tumor tissue during the operation with dissemination through the blood stream. However, despite the highly malignant character of the mother growth, these metastases rapidly disappeared.

The prognosis in our case, judged from the pathologic diagnosis, was most unfavorable and a fatal outcome was predicted in a short time. The husband was notified that his wife was soon to die, and, accordingly, only supportive and symptomatic treatment was followed. When the vaginal metastases occurred, the question arose as to whether the cervix should be removed. We had not performed a total hysterectomy at the second operation because the patient was moribund. Our pathologist advised against it on account of the virulence of the growth. We cannot explain why our patient recovered. Oscar Frankl has shown that certain substances in the maternal blood stream control the formation of chorionepithelioma. He has demonstrated that the serums of normal women during pregnancy are able to destroy fetal tissue from the placenta, while serums from women with chorionepithelioma do not possess this lytic action. Although we performed no tests, it is likely that our patient may have harbored or developed a concentration of such a lytic substance, capable of combating the malignant growth. This substance, present in normal pregnant women, probably cares for the portions of trophoblast that undoubtedly invade maternal vessels and produce the so-called physiologic metastases. Aschheim [4] has emphasized the great concentration of anterior pituitary hormone in the blood and urine of patients with chorionepithelioma. Since the work of Smith and Engle and of Aschheim and Zondek has definitely established the relation of the anterior pituitary to the ovary, the luteinization of the ovaries in chorionepithelioma is readily explained. The ovaries in our case were not enlarged, which may possibly signify an absent or incomplete stimulation of the anterior pituitary, and this may presumably have had an influence on the course of the growth.

The treatment of malignant chorionepithelioma should be radical. Even when metastases are present, hysterectomy may still be performed, as regression of secondary growths following such treatment has been observed at times in all types of chorionic tumors. Since the tumor cells are of an embryonic character, it is logical that irradiation with x-rays and radium should be beneficial. Schmitz [5] treated two cases of malignant chorionepithelioma with radium and high voltage roentgen therapy alone successfully, and he advocates following all radical operative procedures with roentgen therapy. This, no doubt, is the best treatment as the follow-up roentgen treatment destroys the remaining detached embryonic trophoblast.

CONCLUSIONS

1. In a case of very malignant choriocarcinoma with metastases in a young woman, spontaneous cure followed hysterectomy and roentgen therapy.

2. The microscopic picture of chorionepithelioma is not always a true prognostic index of the disease.

3. Radical surgery plus irradiation offers the best results in the treatment of malignant chorionepithelioma.

104 South Michigan Avenue—310 South Michigan Avenue.

4. Aschheim: Am. J. Obst. & Gynec. **19**: 335 (March) 1930.

5. Schmitz, Henry; Hueper, Wilhelm: Malignant Chorionepithelioma Uteri, J. A. M. A. **95**: 1413 (Nov. 8) 1930.

PERIPHERAL NERVE PARALYSES FOLLOWING THE USE OF VARIOUS SERUMS

REPORT OF A CASE AND REVIEW OF THE LITERATURE *

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ROCHESTER, N. Y.

So striking and unusual was the recent development of a palsy and atrophy of the right deltoid muscle in a patient who had had a prophylactic injection of tetanus antitoxin that it seemed worthy of report. The rarity of such an occurrence in my experience also led to a review of the literature in an effort to learn of the frequency and of the general prognosis in similar cases. Some fifty cases have been reported by French authors.

The most complete work which I have found on the subject is that of C. Petit.[1] He has collected reports of forty-two cases and briefly gives the history of each case. The most complete bibliography which I have found on the subject is contained in his thesis.

REPORT OF CASE

L. P., a man, aged 40, Jewish, a tailor, was referred by Dr. Howard L. Prince to the Strong Memorial Hospital, Dec. 19, 1930, with a complaint of pain in both upper arms and shoulders, diffuse pains about the jaws and face, and inability to abduct the right upper arm. The conditions complained of had been present for about three weeks. The past and family histories were entirely irrelevant. He had never had a previous injection of serum.

One month prior to entry, the patient, while at work, ran a needle through the left middle finger. He was immediately sent to a physician, who dressed the wound and inoculated him prophylactically against tetanus. The dose of 1,500 units was given intramuscularly in the left deltoid region. The patient returned to work and felt perfectly well until the fourth day following injection. At this time an intense serum reaction developed. This consisted of a red rash all over the body, with tiny vesicle formation. It was accompanied by intense pruritus. There was an edema involving in succession the face, eyelids, mucosa of the mouth, tongue and gums, the chest, the hands and the feet. Coincident with this, he had aching pain in both upper arms, across the shoulders and about the lower part of the face. He also complained of pain to a lesser extent in the back and legs. The serum reaction began to subside in three days, but the various pains continued with the same degree of severity.

Seven days after the onset of the rash, the patient noticed weakness of the right arm; that is, inability to raise the arm from the side of the body. He noted at the same time an absence of sensation in the right upper arm and a band of anesthesia about both wrist joints (fig. 1).

Treatment up until the time he was first seen by us had consisted in medication for the alleviation of the pruritus and pain.

General examination one month after the onset of his present illness showed little of note that was abnormal except for the upper extremities. The teeth were carious, and peridental infection was marked. There was a typical stocking anesthesia of the right upper arm from the shoulder girdle almost to the elbow. There was also a band of anesthesia about both wrist joints. He was unable to abduct the right upper arm, although all other movements were performed normally. Faradic and galvanic responses of the muscles of the right arm were normal. The deep reflexes were active and equal on the two sides. There were no muscular fibrillations, and no atrophy of the affected part could be made out. The lower extremities were normal.

The conditions observed in the laboratory examination were normal: Hemoglobin, 100 per cent; red blood cells, 5,180,000;

* From the Department of Surgery, Neurosurgical Division, University of Rochester School of Medicine and Dentistry.

1. Petit, C.: Les névrites postsérothérapiques, Thèse de Nancy, 1925.

white blood cells, 9,300. Urine: clear, yellow, acid; specific gravity, 1.013; albumin, negative; sugar, negative; diacetic acid, negative. The sediment showed very occasional white blood cells but no red blood cells or casts. The Wassermann test was negative in all three antigens.

A diagnosis of hysteria was made on the basis of the physical examination combined with the fact that the patient was discontented with his occupation and station in life and was having financial difficulties. He was seen by a psychiatric consultant, who concurred in the diagnosis.

The patient remained in the hospital eleven days, during which time he was given faradic stimulations to the right upper arm along with psychotherapy of a reassuring nature. He stated after the first treatment with the faradic current that he could again feel things perfectly normally in the regions which had previously been anesthetic. The treatments with the faradic current were continued daily. However, it was noted that sensations which were at first normal over the deltoid region of the upper extremity became impaired as time went on. On one occasion the patient applied a hot water bottle, which he had obtained and filled himself, to the deltoid region of the arm and sustained a small burn. He was able to swing the arm about in a circle at the shoulder joint but was never able to abduct it beyond 30 degrees from the trunk. This was always a scapular muscle type of abduction. The faradic and galvanic responses on admission were normal. In ten days, however, the faradic response was less than normal and in a week more had entirely disappeared, a complete reaction of degeneration. It was at this time, the patient already having been discharged from the hospital, that a definite atrophy of the right deltoid and infraspinatus muscles was for the first time evident. There was also a well defined diminished sensibility over the area supplied by the right axillary nerve. Figures 2 and 3 show the atrophy plainly.

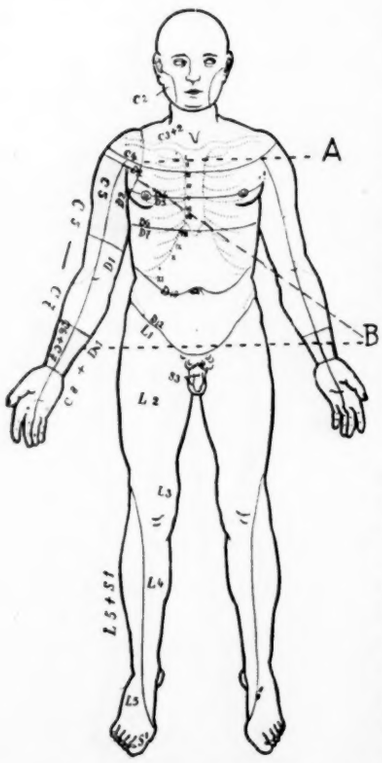

Fig. 1.—Anesthetic areas one month after serum disease: *A*, inability to abduct right arm; normal faradic and galvanic reactions; *B*, complete anesthesia to pin prick.

The patient was again seen by Dr. Prince, who placed the arm in a splint with the arm fully abducted. Almost daily massage has been given. After three months' time there appears to be less atrophy of the deltoid, and feeble movements of the midsection of that muscle can be carried out. Hypesthesia to pin prick over the area of axillary nerve distribution still persists.

In summary, a man, aged 40, was given tetanus antitoxin following a small injury. Severe serum disease ensued three days later. Three days after the onset of serum disease he began to have severe pain in both upper extremities and, to a lesser extent, in the back and legs. Seven days after the beginning of serum disease he noted weakness of the right arm with diminished sensibility. Six weeks after the serum disease he had an evident paralysis of the axillary nerve, with muscular atrophy and complete reaction of degeneration. After some three months of daily massage and abduction in a splint, feeble motions of the midsection of the deltoid muscle can be made out and the muscles appear less atrophic.[1a]

CASES REPORTED IN THE LITERATURE

The first report of a case, according to Pollet,[2] who has written an excellent review of the subject, is that of Engelmann in 1897. This was followed by not more than two or three case reports until 1919. At that time the studies of Lhermitte,[3] who reported three cases, aroused interest in the subject. Since then a number of isolated cases have been reported by various authors. The largest single group of personally observed cases which I have found is that of Etienne,[4] who reported fourteen cases in 1928 observed during a five year period. Kennedy[5] in this country has observed five cases.

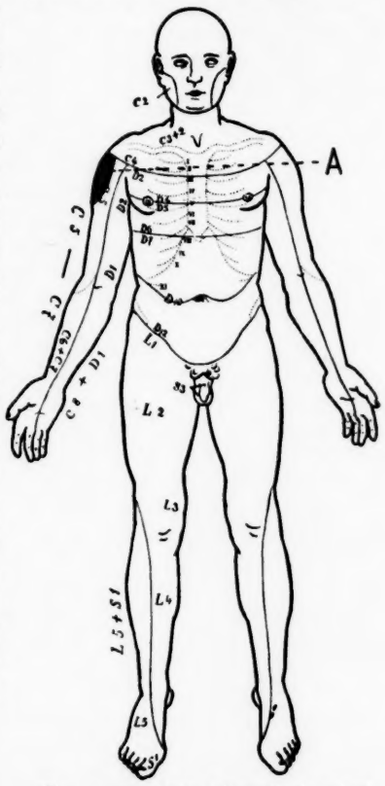

Fig. 2.—Regression of anesthetic areas six weeks after serum disease: *A*, hypesthesia to pin prick; faradic response about one-half normal with a beginning reaction of degeneration; beginning atrophy of deltoid.

In classifying all the available reported cases and summarizing them in tabular form, one notes that the cases fall into two groups. The larger of these is that of peripheral nerve involvement. The other group shows symptoms largely referable to the central nervous system.

The type of serum used seems to have no bearing on the disease. Types of serums used have been varied. Among the fifty cases of which I have collected reports, twenty-one were associated with the use of tetanus antitoxin; in twelve, nerve lesions developed in the course of the treatment of pneumonia by serum; five were treated with antimeningococcus serum; four followed prophylactic inoculation against scarlet fever; four were observed in the treatment of diphtheria by antitoxin, and one occurred in the treatment of tuberculosis by serum. There are also two cases noted following immunization against typhoid with vaccine and one case occurring after the treatment of furunculosis of the skin with Staphylococcus aureus vaccine.

1a. Since this paper was sent to the publisher, the patient has had continued atrophy of the muscles of the shoulder girdle and there is practically complete atrophy of the deltoid, suprascapular muscles and infrascapular muscles on the affected side. At the time that the patient was originally seen, he complained of tinnitus in the right ear. Examination now reveals a complete nerve deafness on that side. At the present time he complains of tinnitus in the left ear. There is no diminution in auditory acuity, however. He also complains of pain in the region of the triceps muscle on the left side. Physical examination fails to reveal any evidence of involvement of the peripheral nerves of the left arm.

2. Pollet, L.: Les polyneurites postsérothérapiques, Gaz. d. hôp. **97**: 561, 1924.

3. Lhermitte, J.: Paralysis After Serum Treatment, Paris méd. **1**: 221 (March 8) 1924; Amyotrophic Paralysis Following Tetanus Antiserum, Rev. neurol. **35**: 894 (Dec.) 1919.

4. Etienne, G.: Névrites sériques, Rev. méd. de l'est **56**: 503 (Aug. 1) 1928.

5. Kennedy, Foster: Certain Nervous Complications Following Use of Therapeutic and Prophylactic Sera, Am. J. M. Sc. **177**: 555 (April) 1929.

Previous injection of serum does not seem to be necessary for the development of nerve paralyses. Of the fifty cases referred to, in nineteen a previous injection had been given, while thirty-two occurred after the primary injection.

The location of the paralyses is interesting. Fourteen of the patients had had palsies of the upper part of the brachial plexus, of the Duchenne-Erb type, and six had a pure radial paralysis. Three cases in the series showed a bilateral involvement of the brachial plexus, while in two a pure axillary nerve paralysis was noted. Three cases of optic neuritis have been reported and two of paralysis of the long thoracic nerve. One case showed a paralysis of the entire brachial plexus, while one other showed a combined palsy involving both the brachial and lumbar plexuses. There was one isolated case of paralysis of the facial nerve following injection of serum.

I have collected reports of four cases of polyneuritis evidenced by pain in all four extremities, only one of which went on to paralysis and muscular atrophy. Two other cases showed pain along the distribution of the sciatic nerve, but paralysis did not develop in either case. Only one case has been reported in which there was an actual paralysis attributable to a lesion of the lumbar plexus.

Of the seven cases of involvement of the central nervous system, all showed the symptoms of meningitis; a paralysis of the lower extremities developed in one and a hemiplegia in another. The three cases which followed bacterial vaccines were, respectively, a case simulating anterior poliomyelitis with weakness followed by atrophy of one of the lower extremities, a case of polyneuritis which showed complete recovery without the development of paresis, and a palsy of the ulnar nerve with subsequent atrophy.

The cases of involvement of the central nervous system have, with two exceptions, followed vigorous treatment of meningitis with serum both intravenously and intraspinally. These cases seem to differ somewhat from the peripheral nerve paralyses which often follow a single small injection. In some of these cases repeated doses were given without mishap and the meningitis was brought under control. Then because of recrudescence of symptoms another dose was generally given intraspinally. Following this there has been an immediate violent reaction with accentuated signs of meningitis, coma, convulsions, great increase in spinal fluid cells without demonstrable organisms, and often death. In the one case that came to autopsy [6] there was a marked edema of the brain, particularly around the base, as well as numerous foci of meningeal hemorrhage.

The striking thing noted, if one surveys the location of the aforementioned paralyses, is the seeming predilection of the disease for the upper extremities. It is true that there are a number of cases of polyneuritis, but with one exception none of these have gone on to paralyses in the lower extremities. Whenever paralysis did ensue, it involved in most cases one of the upper extremities. The prodromal pains, however, may have been just as severe in the lower extremities. That this cannot be due to injection of the serum in the arms is evidenced by the fact that at least half of the patients received the inoculation in another part of the body.

6. Hutinel, V.: Sérothérapie et anaphylaxie dans la méningite cérébro-spinale, Presse méd. **18**: 497 (July 2) 1910.

COMMENT

There seem to be two clinical pictures which may follow serum injection. The first, and probably the more common, is that of injury to the peripheral nerves. In this group the patient receives an injection of serum often for the first time. In from four to eight days, he usually, but not invariably, has a serum reaction of an intense degree. In from two to three days more, severe pain is experienced in one or both of the upper extremities with pain of a lesser degree in other parts of the body. In another two or three days, weakness of one of the upper extremities is then noted. Either this is followed by gradual complete recovery extending over a period of a month, or in about six weeks muscular atrophy and reaction of degeneration to electrical stimuli are noted. The prognosis in the latter group is only fair, incomplete recovery being the rule.

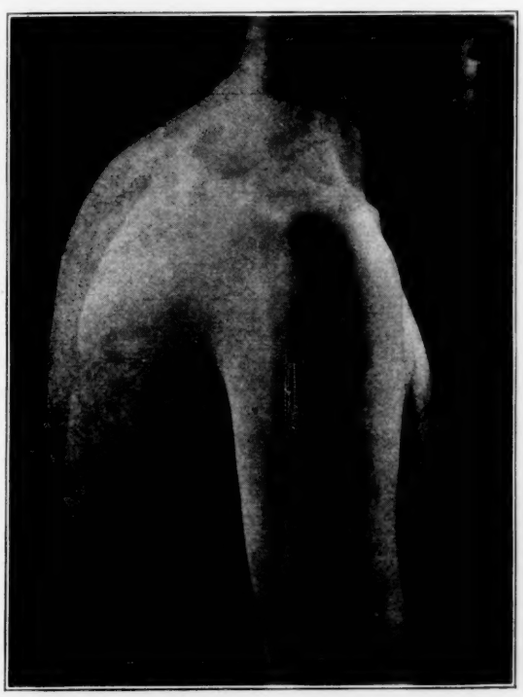

Fig. 3.—Right shoulder girdle six weeks after serum disease, showing obvious deltoid and infraspinatus atrophy.

The cases in the group showing signs of involvement of the central nervous system are on the whole much more serious as regards life. The usual clinical course seems to be as follows: The patient receives serum, generally intraspinally, in repeated doses. After a time, varying from three days to a month, and without warning, another injection is followed by a severe reaction. This is manifested usually by a generalized urticarial eruption, which is followed in a few hours by convulsions, opisthotonos, coma, high irregular pulse, irregularity in respirations, and possibly death. The patient, however, may recover and, if so, recovery is usually complete. If the cord is involved there may be, of course, residual paralysis and atrophies as in poliomyelitis.

The paralyses following vaccines are too few to afford much in the way of conclusions. In general, they seem to be distinguished by the fact that they are not accompanied by serum disease, are much slower and more gradual in onset and do not necessarily show a predilection for the upper extremities.

In the literature, two pathologic processes have been invoked to explain the phenomenon. Most writers have favored a theory of perineural edema resulting in prolonged constriction and ischemia of blood vessels of the nerve, a "perineural urticaria." Such a theory is postulated because of the known swellings which take place in the skin, mucosae, joints, and other regions, in the serum disease. Sicard and Cantaloube [7] in a report of three cases of radial nerve paralysis express the opinion that, because of the winding of the nerve around the humerus in an aponeurotic canal, constriction due to edema can easily take place. That

7. Sicard, J. A., and Cantaloube: Paralysie radiale postsérothérapique, Bull. et mém. Soc. méd. d. hôp. de Paris **47**: 1046 (June 29) 1923.

Fifty Reported Cases of Peripheral Nerve Paralyses Following the Use of Serum

Author	Previous Serum Injection	Type of Serum Used	Time Interval Before Appearance of Serum Sickness	Onset of Pain	Time of Onset of Paralysis Following Serum Sickness	Nerves or Plexuses Affected	Presence of Atrophy	Time of Appearance of Atrophy Following Serum Disease	Reaction of Degeneration	Recovery from Nerve Paralysis
Alajouanine, Fribourg-Blanc and Gauthier: Bull. et mém. Soc. méd. d. hôp. de Paris **52**: 466 (March 15) 1928	Yes	Typhoid vaccine	No disease	1 day	2 days	Spinal cord	Yes	2 mo.	Partial	Partial
Cauchois: Bull. et mém. Soc. de chir. de Paris **38**: 826 (June 5) 1912	No	Tetanus	No disease	1 day	2 days	Upper brachial	....	.....	.....	Partial
Etienne (footnote 4). Etienne and Gerbault: Bull. et mém. Soc. méd. d. hôp. de Paris **53**: 799 (June 24) 1929	No	Diphtheria	No disease	None	1 mo.	Facial nerve	Yes	1 mo.	.....	None
	Yes	Pneumococcus	8 days	11 days	11 days	Lumbar plexus	No	.....	.....	Complete
	Yes	Pneumococcus	No disease	12 days	14 days	Brachial	No	.....	.....	Complete
	Yes	Pneumococcus	No disease	21 days	21 days	Brachial	Yes	5 wks.	Complete	None
	Yes	Pneumococcus	4 days	5 days	6 days	Lumbar	No	.....	.....	Complete
	Yes	Pneumococcus	2 days	12 days	14 days	Brachial	No	.....	.....	Complete
	No	Pneumococcus	No disease	5 days	6 days	Brachial	No	.....	.....	Complete
	No	Pneumococcus	12 days	13 days	7 days	Brachial	No	.....	.....	Complete
	No	Serum for tuberculosis	3 days	4 days	4 days	Polyneuritis	Yes	18 days	.....	None
	Yes	Tetanus	No disease	15 days	15 days	Lumbar	Yes	3 wks.	Complete	None
	Yes	Pneumococcus	No disease	4 days	6 days	Brachial and lumbar	Yes	1 mo.	Complete	None
	No	Diphtheria	.....	9 days	.....	Sciatic	No	.....	.....	Complete
	Yes	Pneumococcus	.....	3 wk.	.....	Polyneuritis	No	.....	.....	Complete
	No	Pneumococcus	7 days	10 days	.....	Polyneuritis	No	.....	.....	Complete
	No	Staphylococcus vaccine	No disease	4 days	45 days	Ulnar	Yes	1½ mo.	Partial	Partial
Gordon: M. J. & Record **127**: 530 (May 16) 1928	No	Streptococcus for scarlet fever	1 day	1 day	2 days	Radial	Yes	3 wks.	.....	Complete
	No	Streptococcus for scarlet fever	10 hours	1 day	1 day	Radial	Yes	4 wks.	.....	Complete
Goujard: Thèse de Paris, no. 538, 1920	Yes	Tetanus	5 days	None	3 wks.	Upper brachial	Yes	3 mos.	Complete	Partial
Kennedy [5]	No	Streptococcus for scarlet fever	4 days	4 days	4 days	Axillary	Yes	.....	Complete	Complete
	No	Tetanus	8 days	8 days	.....	Axillary	Yes	3 mos.	Complete	Partial
	No	Tetanus	7 days	None	.....	Long thoracic	Yes	Seen 2 yr. after	Complete	None
	No	Tetanus	7 days	10 days	12 days	Long thoracic	Yes	15 days	.....	.....
	No	Typhoid vaccine	2 days	3 days	None	Polyneuritis	No	None	None	Complete
Lhermitte (footnote 3); Rev. neurol. **35**: 894 (Dec.) 1919	Yes	Tetanus	No disease	4 days	7 days	Upper brachial	Yes	1 mo.	Partial	Partial
	No	Tetanus	8 days	9 days	11 days	Upper brachial	Yes	1 mo.	Complete	Partial
	No	Tetanus	No disease	5 days	7 days	Upper brachial	Yes	.....	Partial	None
Marchal: Arch. méd. belges **74**: 1124 (Dec. 21), **76**: 406, 1923	Yes	Tetanus	8 days	12 days	3 wks.	Brachial	Yes	3 mos.	Partial	Partial
	Yes	Tetanus	No disease	8 days	2 days	Upper brachial	Yes	4 mos.	.....	Partial
Mason: J. A. M. A. **78**: 88 (Jan. 14) 1922	No	Pneumococcus	7 days	.....	2 wks.	Optic	No	.....	.....	Complete
	No	Pneumococcus	6 days	.....	1 wk.	Optic	No	.....	.....	Complete
	No	Pneumococcus	7 days	.....	1 wk.	Optic	No	.....	.....	Complete
Mouriehau-Beauchant: Bull. et mém. Soc. méd d. hôp. de Paris **47**: 1357 (Oct. 19) 1923, Mouriehau-Beauchant and Fagart: Ibid. **48**: 1406 (Oct. 17) 1924	No	Tetanus	8 days	10 days	11 days	Radial	Yes	.....	.....	None
Mouriquand, de Chaume and Ravault: Lyon méd. **132**: 751 (Aug. 25) 1923	No	Diphtheria	4 days	4 days	5 days	Upper brachial	Yes	7 mos.	.....	Partial
Sainton, Descouts and Le Clerc: Bull. et mém. Soc. méd. d. hôp. de Paris **48**: 754 (May 23) 1924	Yes	Tetanus	4 days	4 days	8 days	Upper brachial	No	.....	... ...	Complete
Sezary and Dessaint: Bull. et mém. Soc. méd. d. hôp. de Paris **47**: 1375 (Oct. 26) 1923	No	Tetanus	8 days	9 days	None	None	No	.....	.....	Complete
Sicard and Cantaloube (footnote 7). Sicard, de Gennes and Cost: Ibid. **48**: 1400 (Oct. 17) 1924	No	Tetanus	9 days	10 days	20 days	Radial	Yes	.....	Complete	.....
	No	Diphtheria	8 days	18 days	.....	Radial	Yes	.....	Complete	.....
	No	Tetanus	9 days	11 days	.....	Radial	Yes	.....	.....	....
	No	Tetanus	6 days	8 days	10 days	Bil. brachial	....	.....	.....	.....
Souques, La Fourcade and Terris: Bull. et mém. Soc. méd. d. hôp. de Paris **48**: 757 (May 23) 1924	No	Tetanus	6 days	10 days	10 days	Bil. brachial	Yes	15 days	.....	.....
	No	Tetanus	6 days	6 days	6 days	Bil. brachial	Yes	18 days	.....	.....
Central Nervous System Cases										
Delahet: Bull. et mém. Soc. méd. d. hôp. de Paris **44**: 1272 (Oct. 29) 1920	Yes	Meningococcus	7 days	Immediate	Immediate	Central nervous system	....	.....	.....	Complete
Hutinel [1]	Yes	Meningococcus	6 days	Immediate	1 hour	Central nervous system	....	.....	.....	Death
	Yes	Meningococcus	3 days	Immediate	Immediate	Central nervous system	....	.....	.....	Death
	Yes	Meningococcus	3 wks.	Immediate	3 hours	Central nervous system	....	.....	.....	Death
Kennedy [5]	No	Streptococcus for scarlet fever	4 days	4 days	4 days	Central nervous system	....	.....	.....	Complete
Morichau-Beauchant: Bull. et mém. Soc. méd. d. hôp. de Paris **47**: 1357 (Oct. 19) 1923, Morichau-Beauchant and Fagart: Ibid. **48**: 1406 (Oct. 17) 1924	No	Tetanus	3 days	4 days	4 days	Central nervous system	....	.....	.....	Death
Sheppe: Am. J. Clin. Path. **1**: 77 (Jan.) 1931	Yes	Meningococcus	No disease	Immediate	1 hour	Central nervous system	....	.....	.....	Complete

this explanation cannot hold for every case is evident, for I have collected reports of a number of cases in which paralysis developed without any previous serum disease and still others in which the paralysis came on from ten to fifteen days after subsidence of the serum reaction. That the theory of perineural edema applies more readily to the cases of involvement of the central nervous system with symptoms of meningitis is upheld by the only autopsy of which I have been able to find a record. Another commonly advanced theory is that of direct toxicity of the serum for nervous tissue.

The only experimental work that I have been able to find on the subject, although it does not directly bear on this subject, is that of Dechaume and Croizat,[8] who produced acute anaphylaxis in animals and then removed the nervous system for examination. Histologically, they found areas of congestion and hemorrhage in the brain and spinal cord. Whether this condition is due to direct action on the nerve tissue is a point about which it seems difficult to be certain.

I concur with other writers in the opinion that this condition is quite rare, although there undoubtedly have been unrecognized cases. As has been stated previously, many of the cases show only a polyneuritis during serum disease, without subsequent paralysis. Many of these cases have been without doubt considered as serum disease alone, without any thought being paid to the nervous system. Still other cases in which paralyses actually develop are unrecognized, as is shown by the fact that one of the cases [5] was brought to my attention four years after serum disease as a case of paralysis due to anterior poliomyelitis. Peripheral nerve paralysis following the use of serum is, however, so rare that it should in no way influence the use of prophylactic serums but should be regarded as one of the hazards of so doing, and the patient should possibly be warned of rare untoward results.

SUMMARY

1. A paralysis of the right axillary nerve following the use of prophylactic tetanus antitoxin is reported.

2. Fifty cases reported in the literature are reviewed.

3. The fact that the cases show a great predilection for the upper extremities is pointed out, and an attempt to construct a typical clinical picture is made.

4. Seven cases of involvement of the central nervous system are reported, most of them simulating aseptic meningitis.

5. The etiologic theories considered are those of constriction of the nerves by perineural edema and direct toxicity of the serum for ganglion cells or their processes.

6. Prognosis is determined by the occurrence of atrophy. In those cases in which atrophy is not noted in from six weeks to two months, the prognosis is good. In cases in which atrophy occurs, the prognosis is poor.

8. Dechaume, J., and Croizat, P.: Lésions nerveuses dans l'anaphylaxie chronique expérimentale, Compt. rend. Soc. de biol. **101:** 1145 (Aug. 13) 1929.

Ideas and Research.—The truth in science can be found only by trial or experimentation; but before the trial is made there must be a reason for its execution. This is to be found in an idea. The idea is the most valuable thing in research. Ideas never come to a man who accepts everything he hears without mental reservation. They never come to the careless nor to those who never ask why. They never come to the man who is satisfied with science as it is today. Ideas come only to the man who asks why and who tries to answer his own questions. They come to the man who thinks about the facts that he reads and observes.—Banting, F. G.: Medical Research, *New York State J. Med.*, March 15, 1932.

THE TREATMENT OF CHRONIC OSTEOMYELITIS

WITH SPECIAL REFERENCE TO THE USE OF THE MAGGOT ACTIVE PRINCIPLE *

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AND
L. H. PRINCE, M.D.
HINES, ILL.

Observations on the action of live maggots in suppurating wounds are not new—in fact, they are probably as old as medicine itself.

Ambrose Paré,[1] in the sixteenth century, observed unusually rapid healing of suppurating wounds in which blow flies had deposited their eggs. Other references were made by Larrey,[2] Napoleon's famous surgeon, who noticed during the Syrian campaign the presence of larvae in the wounds of soldiers. Although these insects were troublesome, they expedited the healing of the wounds by shortening the work of nature and causing "the sloughs to fall off."

Malgaigne,[3] in 1847, made an observation concerning the action of maggots in the treatment of complicated fractures. Similar observations were made in the Civil War by Dr. W. W. Keene. These observers stated that maggots exerted a healing influence on infected wounds.

Dr. Edward Martin of Philadelphia, referring to maggots at a session of the Clinical Congress of Surgeons of North America, stated that surgeons had been advised by one eminent member of the profession "to take all antiseptics and throw them into the sea." Another member had advised them "to raise a brood of tame maggots to take care of the wounds."

Maggots were first used scientifically as living antiseptics in the treatment of chronic pyogenic and tuberculous osteomyelitis by the late Dr. William S. Baer,[4] who, while serving with the American Expeditionary Forces during the World War, observed that certain soldiers when brought to the base hospital had no fever nor evidence of sepsis although they had lain on the battlefield for as long as seven days without food, water or medical attention and were suffering from compound fractures of the femur with large flesh wounds. On removing the clothing he was surprised to see the wounds filled with maggots, apparently those of the blow fly. These wounds, when cleaned, were found to be filled with healthy, pink granulation tissue instead of the usual pus and débris.

These practical observations after some ten years led Dr. Baer to animal experimentation with live maggots. He followed these with clinical application of the larvae in the treatment of chronic pyogenic and tuberculous osteomyelitis. As reported in his paper on the treat-

* From the Edward Hines, Jr., Hospital.

1. Paré, Ambroise: Les œuvres d'Ambroise Paré, ed. 2, 1579. Les œuvres d'Ambroise Paré, A. Lyon, Pierre Rigaud, 1652; Translation from the Latin by Theodore Johnson, London, Clark **10:** 249, **11:** 277, 1678. Singer: Selections from the Works of Ambroise Paré, 1924, p. 218.

2. Larrey, D. J.: Observations on Wounds and Their Complications by Erysipelas, Gangrene and Tetanus, translated from the French by E. F. Rivinus, Philadelphia, Key, Mielke and Biddle, 1832, p. 34; Des vers ou larves de la mouche bleue, Chez Gabon, Paris, Clin. chir. **1:** 51 (Nov.) 1829.

3. Malgaigne, J. F.: Treatise on Fractures (and Luxations), under the heading of "Treatment of Complicated Fractures" **1:** 271, line 22, concerning maggots, Paris, 1847.

4. Baer, W. S.: Sacro-Iliac Joint; Arthritis Deformans; Viable Antiseptic in Chronic Osteomyelitis, Proc. Internat. Assembly Inter-State Postgraduate M. A. North America, October, 1929, pp. 21-25; **5:** 365-372, 1930; The Treatment of Chronic Osteomyelitis with the Maggot (Larva of the Blow Fly), J. Bone & Joint Surg. **13:** 438-475 (July) 1931. Baer, W. S., and Livingston, S. K.: Hearings Before the Committee on World War Veterans' Legislation House of Representatives, 71st Congress, 2d Session, on "The Treatment and Cure of the Disease Known as Osteomyelitis," April 17, 1930.

ment of chronic osteomyelitis, live maggots were used in eighty-seven cases. The results led Dr. Baer to reach the following conclusions:

1. Maggots have been found to be a tremendously useful adjunct to thorough surgical treatment of chronic osteomyelitis, and, in our opinion, are far more successful in

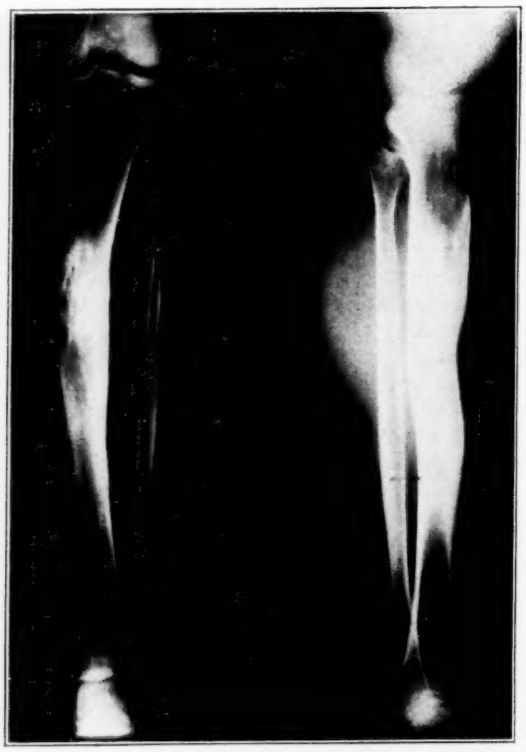

Fig. 1 (case 18).—Sequestration of upper and outer third of tibia before operation. Successful.

securing permanent healing of these extensive wounds than any other method tried by us.

2. Maggots, by their digestive action, clear away the minute fragments of bone and tissue sloughs caused by operative trauma in a way not accomplished by any other means. This is a tremendously valuable asset in the healing of a wound.

3. Maggots cause wounds to become alkaline and in this way diminish growth of pathogenic bacteria.

4. Maggots seem to have other more subtle biochemical effects within the wound itself and perhaps cause also a constitutional reaction inimical to bacterial growth. This is under investigation.

5. Maggots as raised and sterilized in the manner described may be used in any wound without risk to the patient.

6. The post traumatic or postoperative general condition of the patient is better in maggot treatment than in the older forms of treatment where infection was combated by chemicals or other types of dressing. There is less absorption and less toxic reaction.

7. In open tuberculous abscesses, with or without secondary infection, wide exposure followed by maggot treatment has proved surprisingly effective in a small number of cases and will be given further trial.

In the early days of this work one of us (S. K. L.) enjoyed the privilege of being on Dr. Baer's orthopedic service at Johns Hopkins Hospital. One of the early problems was the production of live maggots. At first the methods were crude, but eventually a satisfactory technic was developed, which is briefly as follows: The parent fly is the green bottle blow fly (Calliphora erythrocephala). These flies, fed on yeast and honey, are reared in gauze cages under proper conditions of temperature and humidity. Suitable material is placed in the cages on which the flies deposit their eggs. The eggs hatch in from eight to twenty-four hours, resulting in a crop of healthy maggots, which are about 1.5 cm. long. When the larvae are 48 hours old, they are ready to place in the wound after proper sterilization.

It was formerly supposed that maggots were effective because of their mechanical action—rapid movement and the ingestion and digestion of bacteria and necrotic material, thus rendering such matter inert, stimulation of a rapid outpouring of blood serum, which is healing, and the rapid increase of the p_H of the wound. When observed closely, it has been noted that in the early stages of treatment (after the first to third applications) the maggots will live until replaced. As the treatment continues, the maggots will live for a decreasing period and after the fifth application the maggots will live only a few hours. Death occurs because the p_H of the wound has increased and because some substance has been produced through the contact of the live maggots with the tissues which so increases in virulence that with time the maggots are killed by its potency. For want of a better name, we have called this substance a therapeutic active principle.

All through this work our attention has been continually focused on the fact that it was not mere mechanical action of the maggots that was primarily responsible for the beneficent results obtained by their

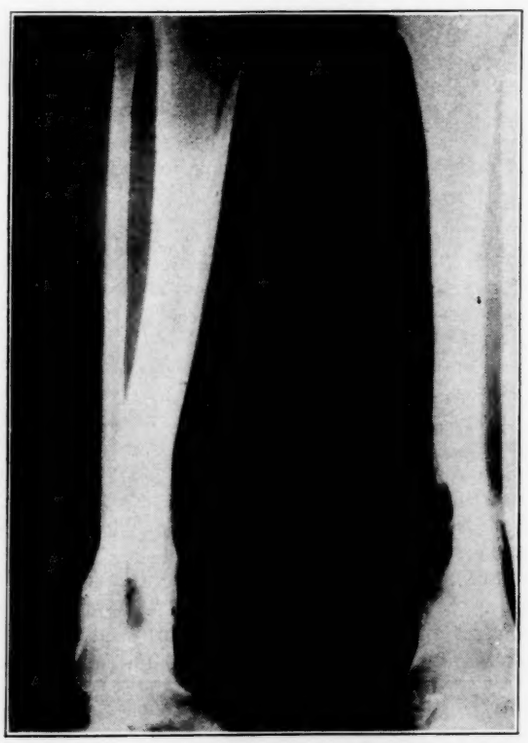

Fig. 2 (case 20).—Sequestration of lower end of tibia, with ankylosis of the astragalotibial joint and osteomyelitis of the astragalus.

use. Animal experiments [5] showed that this additional agent which was developed through the contact of the maggots with the living tissues was, in itself, a curative agent. That an additional agent was probable in effecting a cure seemed clearly demonstrated by the use of filtered extracts from the bodies of crushed larvae. These observations pointed clearly to the presence of

5. Because of the many details, these experiments are not reported.

some substance which, in itself, was sufficiently powerful to overcome infections and permit a normal p_H balance to be established. Our opinion was further warranted from the fact that filtered, uncontaminated products derived from the bodies of larvae in culture when brought into contact with pyogenic organisms in petri dishes destroyed the cultures. We at first believed that the agent effecting this result was a bacteriophage. This early work was summarized as follows:

1. In a series of 100 cases including infections resulting from fractures, tuberculous and pyogenic chronic osteomyelitis and infected stumps following repeated amputations, we have had 95 per cent cures.

2. The success of this treatment does not alone depend on the scavenger activities of the maggots.

3. A series of experiments would seem to show that some additional agent is developed within the wound which is sufficiently powerful to overcome infection and permit the normal p_H balance to be established. This agent was believed to be a bacteriophage. Further investigation, however, pointed to a substance not affected by sterilization.

nature. They were of long standing, many of them reverting to war injuries. In comparison with the number of cures obtained in children, it must be considered that the child has the advantage of being on the physiologically ascending side of life, whereas the patients coming under our observation were those who had reached the fastidium and were on the physiologically declining side.

In this article an effort has been made to report the failures (12 per cent), with emphasis on the types of cases which, because of massive involucrum, inaccessibleness of the infection or virulence of the offending organisms, have not completely healed. Only two typical cases (2 and 33) of the 88 per cent of successes have been illustrated. Four patients (19 to 22) with osteomyelitis of the tibia and astragalus and ankylosis of the astragalotibial joint were treated. Two of these cases (50 per cent) recurred and two (50 per cent) were healed. Thirty-one cases of chronic osteomyelitis of the femur (66 to 96) were healed, 88.6 per cent, and

Summary of Cases

Cases	Area Involved and Diagnosis*	Etiology	Previous Treatment	Method of Treatment	Results	Duration of Treatment	Temperature Range
1 to 18	Tibia	The offending organisms were found to be pure cultures or mixtures of Staphylococcus hemolyticus, Staphylococcus aureus, Staphylococcus albus, Streptococcus hemolyticus, Bacillus pyocyaneus, diphtheroid organisms	In the cases of osteomyelitis, previous hospitalizations from one to twelve; duration of hospitalizations from one to eight months; previous operations, from one to thirty-one In the compound fracture cases, twenty-five were direct admissions; eight patients had previously been admitted and subsequently developed osteomyelitis In the cases of middle ear disease there had been a discharge for ten years	Radical sequestrectomy or open reduction with or without Lane plate; the wound left wide open and packed with plain gauze for forty-eight hours; live maggots introduced every three to five days for three to five applications, followed by introduction of active principle saturated pack changed daily; inoculation every fourth day with autogenous or polyvalent vaccine containing active principle; in middle ear disease, packing with cotton pledgets and inoculations only	One patient died Six cases did not respond to treatment and five cases recurred Total healed cases, 88%; failures, 12%	From six weeks to six months	From 98.6 to 104.0 F. with or without chills
19 to 22	Tibia, astragalus and astragalotibial joint						
23 to 24	Humerus						
25 to 26	Elbow joint						
27 to 30	Multiple abscesses, osteomyelitic						
31 to 32	First and second phalanges of index finger						
33 to 64	Compound fractures of bones of leg, bones of forearm, femur or humerus						
65	Knee joint (osteoarthritis)						
66 to 100	Femur						

* These are all cases of primary osteomyelitis unless otherwise stated.

ACTIVE PRINCIPLE AND VACCINE

The active principle was obtained by grinding live maggots in sterile saline solution and filtering the product through coarse and fine Berkefeld filters. Due care was taken to preserve a sterile environment to ensure sterility and standardization for potency of the product by standard methods. Sterility was tested aerobically and anaerobically before use. Recently solid substances have been obtained from the filtrates, which to date are of unknown composition. Chemical analysis [5] and animal experimentation [5] are now being attempted to prove the nature of these healing substances. The vaccine used was an autogenous or polyvalent suspension of killed organisms counted and fortified by the active principle and tested for sterility. A vaccine of killed organisms in saline solution without the active principle fortification did not prove sufficient.

TYPES OF CASES TREATED

In the series at Edward Hines, Jr., Hospital, consisting of 200 cases, we have been successful in the first hundred in healing 95 per cent, and we were successful in healing 88 per cent in the second hundred. These cases were all in adults and were chronic in their

four cases (97 to 100) of ninety-eight have either failed to heal or recurred, 11.4 per cent.

All cases except 25 and 26 and 33 to 65, inclusive, were primary chronic osteomyelitis with sequestration and periosteal involvement with or without joint symptoms. Eighteen cases (1 to 18) involved only the tibia. Four cases (19 to 22) involved the lower third of the tibia, the astragalotibial joint and the astragalus. The middle third of the humerus was involved in two cases (23 and 24), one a spontaneous infection, the other a pathologic osteomyelitic fracture. Two cases (25 and 26) involved the elbow joint and associated bones following injury. Cases 27 and 30 presented multiple osteomyelitic abscesses and sinuses involving one or more of the large bones. Cases 31 and 32 consisted of a traumatic osteomyelitis without fracture of the first and second phalanges of the index finger. Thirty-two cases (33 to 64) consisted of compound fractures of both bones of the leg, both bones of the forearm, femur or humerus. Case 65 was a severe suppuration of the knee joint following an arthrodesis for infectious arthritis. Thirty-five cases (66 to 100) consisted of primary chronic osteomyelitis of the femur.

ETIOLOGY

The offending organisms were found to be pure cultures or mixtures of Staphylococcus hemolyticus, Staphylococcus aureus, Staphylococcus albus, Streptococcus hemolyticus, Bacillus pyocyaneus or diphtheroid organisms. Two cases were tuberculous, secondarily

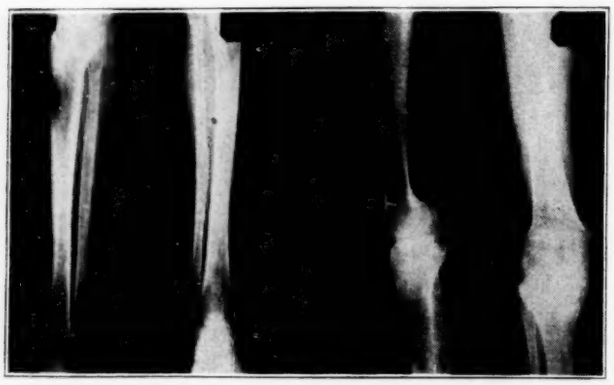

Fig. 3 (case 28).—Sequestration of lower half of femur and upper third of tibia, same side, with bony ankylosis of knee joint.

infected with Staphylococcus aureus, Staphylococcus albus or Streptococcus hemolyticus in pure culture.

Ten per cent of the osteomyelitic cases did not give a history of trauma. In 90 per cent some sort of injury had been sustained aggravating their condition, which, before trauma, gave no symptoms. All the fracture cases except one, which was pathologic, gave a history of injury, the infection being secondary and carried into the wound from the surrounding skin and clothing. One case gave a history of chronic osteartbritis without trauma, and the etiology when the joint was opened proved to be a mixed streptococcus and staphylococcus infection.

PREVIOUS TREATMENT

In the cases of chronic osteomyelitis reported, there had been from one to twelve previous hospital admissions. The duration of each hospitalization was from

Fig. 4 (case 29).—Sequestration of lower half of femur, lower third of tibia, astragalus, and astragalotibial joint. Femur shows a marked thickening of the cortex in its lower half.

one to eight months and the number of operations from one to thirty-one. Among the compound fracture cases, twenty-five were direct admissions. Eight patients had been admitted before and when seen had malposition of the fragments with infection of the cortex, periosteum and surrounding soft tissues. The case of suppuration following an osteoarthritic infection and arthrodesis had been under treatment for two years.

METHOD OF TREATMENT

In the chronic osteomyelitic cases a radical sequestrectomy was performed, provided the hemoglobin was at least 70 per cent and the red cell count 4,000,000. The wound and periosteum at operation were packed wide open with plain gauze for forty-eight hours to control hemorrhage. Fifteen hundred units of tetanus antitoxin was given prophylactically in each case at the time of the first dressing. This was done not because we fear introduction of tetanus but because we fear the presence in these cases of a latent infection which might be activated by the sequestrectomy. This has been discussed at length by the British as a result of their war experience. In compound fractures, the introduction of infection, of course, makes the use of antitoxin imperative. The wound at each dressing was irrigated with physiologic solution of sodium chloride

Fig. 5 (case 30).—Shrapnel wound of ossa innominata.

and live maggots were introduced at the time of dressing every three days if the discharge was profuse; otherwise, every five days. If the wound was clean and the discharge moderate or slight after the third application, the use of live maggots was discontinued and gauze packs saturated with active principle were introduced daily until healing was accomplished or until the discharge again increased in amount. If the discharge again became profuse, maggots were reintroduced from one to three times, to be followed again by active principle packs every day. The patient was inoculated with either the polyvalent vaccine or an autogenous vaccine containing active principle every fourth day. The initial dosage of 0.1 cc. was increased by 0.1 cc. at each inoculation to 1 cc. In a few protracted cases, a second series of inoculations were given after a two-week interval. In cases of small sinuses of tuberculous and pyogenic etiology in which operation was not performed because of debility of the patient or extensiveness and tortuosity of the sinuses, cases in which packs could not be used, the sinuses were irrigated every third day with the active principle, which was allowed to remain

and be absorbed from the sinus walls. The patient was inoculated every fourth day, provided the constitutional reaction from absorption of the active principle was not too great. In tuberculous cases, inoculation and irrigation controlled the secondary infection only, destroying or attenuating it so that the patient's entire vitality could be used in fighting the acid fast infection.

Fig. 6 (case 33).—Compound comminuted fracture of the middle third of both bones of leg. Successful.

In five cases (25, 31, 32, 33 and 65) only the active principle and vaccine were used successfully, following operation.

In cases of compound fractures, an open reduction was accomplished. In many of these cases a Lane plate was used. The periosteum and soft structures were left wide open and packed for forty-eight hours to control hemorrhage. A plaster cast in which a window was cut or traction suspension apparatus was applied. The treatment was then as described. A Lane plate is not a contraindication to the use of live maggots or maggot active principle. The presence of infection in compound wounds is not an indication for delayed surgery or for the introduction of a Lane plate when such procedures are accompanied by live maggots or maggot active principle treatment or the combination of these.

In cases showing only a slight infection following compound fractures, the active principle and inoculations only were used following operation with equally good results. It is only necessary to use the live maggots in severe infections to supplement the work of the surgeon. This treatment is to be followed by the active principle. In our opinion, this procedure is a decided advance in maggot therapy and supersedes the use of live maggots throughout the entire course of the treatment.

In cases involving a joint, the joint was opened widely and the foregoing therapy used successfully.

In one case of multiple small sinuses of tuberculous origin with a secondary infection, the sinuses were healed by local irrigations every third day. The active principle in doses of 25 cc. was allowed to remain in the sinuses. No inoculations were given in this case because of the marked constitutional reactions to the absorption of the active principle from the sinus walls. This case was a poor operative risk. We do not claim cure of tuberculous infections by live maggots, by active principle or by the combined therapy with or without inoculations. This form of therapy will only destroy the secondary invaders and thereby reduce the amount of infection against which the patient has to struggle.

DURATION OF TREATMENT

The cases of mild or moderate infection healed in about six weeks. The severely infected cases required from three to six months.

RESULTS

Case 18 (fig. 1) and case 33 (figs. 6 and 7) were typical types of cases which responded to treatment; i. e., chronic pyogenic osteomyelitic cases with a single focus of infection without massive involucrum and compound comminuted fractures in which there is not too extensive an involvement of the soft structures which are not accessible. In order that the treatment may be successful, the maggots and active principle must reach the recesses of the wound, and on this fact depends the success or failure of this form of treatment.

One patient succumbed to amyloid disease, as proved at autopsy. Six cases failed to respond to treatment.

Fig. 7 (case 33).—After open reduction and insertion of a Lane plate. The wound was left open, packed with plain gauze, and a plaster cast was applied in which a large window was cut for dressings. Successful.

To date we have had five recurrences. One yielded promptly to active principle vaccine and physical therapy and the other four are under treatment, making a total of 12 per cent failures and 88 per cent successes. We have been able to follow 85 per cent of our discharged patients.

It is, of course, too early to speculate on the permanence of these results. Epidermization, which in some of our cases was slow in covering the large areas of granulation tissue that rapidly fills the wound, has been expedited by physical therapy; i. e., whirlpool, infra-red light or direct sunlight.

FAILURES

Considering first those cases that did not respond to treatment, the reasons for failures have been:

1. Patient 19 was uncooperative; he left the hospital in the midst of his treatment. He was seen three months later and the sinus was still draining.

2. Patient 28 (fig. 3) had multiple foci of infection involving the right femur throughout its lower half, the right knee joint with resulting ankylosis and the upper third of the tibia on the same side. The reason for failure was the involvement of the cortex and periosteum of the femur around its entire circumference. The cartilages of the knee joint were entirely destroyed by the infection and they were replaced by unhealthy and spongy bone tissue. The lesion in the tibia healed.

3. Patient 29 (fig. 4) had multiple foci of infection involving the humerus with an old pathologic fracture ununited, the opposite femur with massive involucrum and extensive periosteal involvement and the lower third of the tibia, the astragalotibial joint and the astragalus. In our experience, involvements of the tarsal bones are among the hardest to treat. They respond to treatment slowly and unsatisfactorily because the disease rapidly necroses the medullary part of the bone, leaving only a diseased shell. Also in the cases presenting multiple foci of infection the offending organism is usually a hemolytic staphylococcus or hemolytic streptococcus which, coupled with the lowered resistance of the patient resulting from a massive infection of the blood stream, makes healing slow and difficult.

Fig. 8 (case 64).—Lesion at time of first dressing, forty-eight hours after open reduction and insertion of a Lane plate. The wound was left wide open and a plaster cast was applied.

4. Patient 30 (fig. 5), as proved at autopsy, died from amyloid disease. This was a case of massive destruction of the ossa innominata. The infection had been present and increasing for ten years before treatment began.

5. Case 64 was a badly infected compound fracture of the lower third of both bones of the leg (fig. 8). A Lane plate was inserted, and a plaster cast applied in which a window was cut. Living maggots were used for two weeks, but the infection (Staphylococcus hemolyticus, Streptococcus hemolyticus) continued to spread and an amputation was done, followed by the use of the active principle as a pack and the vaccine. The stump is at this time healing nicely, although at the time of amputation the stump end was badly infected. We believe that in this case the active principle and vaccine made amputation possible below instead of above the knee.

6. Case 65 was an old infectious arthritis of the right knee. An arthrodesis was done and subsequently a suppurating knee developed. This case was treated by the vaccine and active principle and the outcome is still doubtful. An amputation will probably ensue.

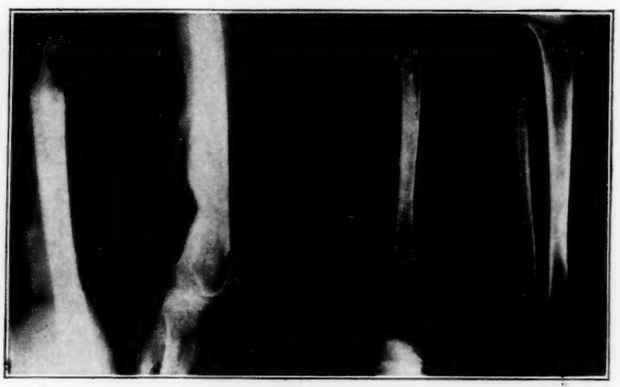

Fig. 9 (case 97).—Tuberculous osteomyelitis of the lower half of the femur. Tibia and fibula normal.

7. Case 97 was an extensive tuberculous involvement of the lower half of the right femur following a gunshot wound in 1925. The patient had been under treatment for five years preceding admission and presented large, wide open operative lesions on the entire outer aspect of the right thigh (fig. 9). From these extruded a copious amount of pus. The case looked hopeless from the beginning. Six months of treatment resulted in only partial healing.

The recurrences were as follows:

1. Patients 20 (fig. 2) and 17 returned with superficial infection of soft tissue which healed promptly by the use of physical therapy, active principle and vaccine. Patient 20 is still under treatment.

2. Patient 98 (fig. 10) was discharged with a small sinus on the outer aspect of the thigh. He sought readmission two weeks after discharge.

3. Case 99 was an extensive involvement of the femur. The patient left the hospital against medical advice and returned four months later for subsequent treatment. At the date of this writing, healing has nearly taken place for the second time.

4. Case 100, an extensive involvement of the femur and periosteum with massive involucrum around the entire shaft (middle third), resisted all treatment at the time of the first admission. The patient is now under treatment following the third operation on the femur. Results are doubtful in this case and a similar case now being treated.

RESULTS OF TREATMENT

1. When periosteal involvement is extensive with a massive involucrum around the entire circumference of the shaft, thereby preventing surgical removal of the gross lesion, the treatment is not successful in 11.9 per cent of cases.

2. Osteomyelitis of the tarsal bones destroys rapidly, leaving only a hollow, necrotic shell. This type of involvement is resistant to any form of treatment.

3. A Staphylococcus hemolyticus or a Streptococcus hemolyticus infection is slow to heal because of its virulence, responding the least of all types of infection.

4. Tuberculous infections (osteomyelitic) are not cured by this form of therapy. Only the secondary invaders are destroyed.

5. In cases presenting multiple osteomyelitic foci there is an associated blood stream infection with lowered bodily resistance, and they are very slow to heal.

6. Far advanced cases of long standing with signs of amyloid disease will not respond to treatment.

7. Care must be taken to prevent too rapid healing of the wound. Healing must take place from the bottom. If is often necessary to introduce a clamp into the wound which, when opened, will separate the adherent soft tissue walls.

SYSTEMIC REACTION

Following each inoculation or application of the active principle, or both, there will be a variable systemic reaction. This may consist of a chill followed by a rise of temperature as high as 104 F. with return to normal by lysis over a period of three days. If the chill is too severe, it may be controlled by the hypodermic injection of epinephrine (1:1,000) 15 minims (1 cc.). The rapidity of the success of the treatment seems to depend to some extent, at least, on the occurrence of a systemic reaction. Many of our cases throughout treatment did not show any reaction, while others evidenced only a slight elevation of temperature. Recovery occurs, however, equally well but more slowly in cases showing only slight reactions.

Fig. 10 (case 98).—Complete circumferential involucrum of shaft of femur, middle third, multiple sequestrums and sinuses.

USE OF ACTIVE PRINCIPLE AND VACCINE

We have begun the treatment of chronic leg ulcers, sinus and mastoid infections and middle ear disease by active principle and vaccine therapy. Live maggots are not used in any of these cases. At this time our clinical data are not sufficient to afford more than a preliminary announcement. As regards sinus infections, we are now using the active principle as an irrigating fluid following puncture of the antrum. In three cases of chronic discharging middle ear disease, we rather skeptically packed daily with cotton pledgets of active principle and inoculated every fourth day with the autogenous vaccine containing active principle and were astonished at the result. The discharge disappeared after two weeks. These cases gave a history of ten years. In all cases referred to in this paragraph, we gave inoculation of autogenous or polyvalent vaccine containing active principle in the method described. The work is being carried on through cooperation of the eye, ear, nose and throat departments at Edward Hines, Jr., Hospital and the University of Illinois.

SUMMARY

1. An active principle has been isolated from maggot filtrates. This substance is undergoing chemical analysis and animal experimentation in an effort to determine its exact nature.

2. One hundred cases of chronic osteomyelitis, infected wounds and compound fractures have been treated by this active principle and vaccine with or without the use of live maggots, and 88 per cent of the cases have been healed.

3. Chronic leg ulcers, sinus infections and mastoid infections are now being treated by this active principle and vaccine. Results cannot yet be stated.

4. Three cases of long-standing middle ear disease have been healed.

THE BAER MAGGOT TREATMENT OF OSTEOMYELITIS

PRELIMINARY REPORT OF TWENTY-SIX CASES *

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CHARLES A. DOAN, M.D.
AND
DAVID F. MILLER, PH.D.
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Those who are in constant contact with chronic osteomyelitis realize that considerable advances have been made in recent years in the technic of handling the disease surgically. Nevertheless, many cases still fail to heal following the usual surgical procedures. The presence of many adult cases of long duration is sufficient testimony of a lack of perfection in treating this disease in childhood, when it usually makes its first appearance. Any new method, therefore, that may give promise of reducing the number of failures and lessening the time of healing is deserving of serious consideration.

The success or the failure of any form of treatment in this disease is influenced by several factors. The age of the patient and the duration of the disease are important. Osteomyelitis seems to heal most readily in very young patients. When the lesion has been present for many years, the chance for success with any method of treatment is greatly lessened. The adult cases usually represent a continuation of the infection from younger days or a recurrence from an old lesion. In these cases there are pathologic changes, which tend to interfere with healing. The development of dense, eburnated bone, with a very poor blood supply and tissue low in healing power, creates a condition difficult to correct. There is also dense fibrosis of the surrounding soft tissues which presents a difficulty in the matter of permanent closure without breakdown and sinus formation. The real problem presented by these cases is that of securing adequate treatment in earlier years before this tertiary condition has had time to develop. The approach to this problem must be along the lines of preventive rather than of late curative surgery.

The location of the lesion has a definite influence on the course of the disease. It is a common observation that superficial lesions show the greatest tendency to heal. Such lesions are easily approached and the tissues may be kept open without difficulty. Thus, infections of the tibia and fibula have yielded most readily to simple operative procedures. The femur offers more difficulty and is harder to keep exposed. Lesions of the upper end of the femur and of the pelvic bones are notoriously difficult to deal with, and patients with such

* From the Ohio State University College of Medicine.

a localization of the disease usually undergo repeated operations without relief. The rule of location is, of course, not a hard and fast one.

The surgical technic used will always play an important rôle in any method of treatment for chronic osteomyelitis. We have observed that when gross sequestrums can be removed without disturbing living bone, healing will usually occur whatever method of after-treatment is used. Where this is not possible and living bone must be attacked to expose the sequestrums, it is our custom, whenever it is necessary to detach the periosteum, to remove the underlying denuded area of bone.[1] This bone usually represents involucrum, and practically all its blood supply comes from the periosteum. If the periosteum is removed and the bone is left, it will in many cases sequestrate. We also feel that cutting instruments are probably used too frequently. Often mere exposure of the diseased area is all that is needed. The problem of chronic infection is not nearly so important as the necessity for as little interference as possible with the blood supply of the borderline bone cells. Osteomyelitis presents not simply the problem of creating a hole in a diseased bone; it is rather a disease the treatment of which requires mature clinical judgment, and this judgment can be gained only by experience.

Recurrence is a condition imperfectly understood. In some cases it seems to be a breaking down of scar tissue from insufficient blood supply plus a slight injury. In still other cases, a lighting up of the original infection may occur.

METHODS OF TREATMENT

Since the advent of modern surgery, various methods have been advanced to increase the percentage of cases showing satisfactory end-results. E. H. Nichols[2] advocated removal of the entire shaft of the diseased bone subperiosteally, depending on the periosteum to regenerate a new structure. The failure of such regeneration to occur in a number of cases necessitated the abandonment of the method. During and after the war, chemical antiseptics became popular, including iodoform, surgical solution of chlorinated soda and its derivatives, mercurochrome-220 soluble, and gentian violet. At the same time the British were using bismuth iodoform paste. The petrolatum pack had been used sporadically in this country. Orr,[3] a few years ago, decried the use of chemicals and called attention to the fact that antiseptics injure the healing surfaces and do considerable damage to the tissues and thus hinder rather than aid in bringing about the desired result. He advocated a wide opening of the diseased area to be followed by a packing of the wound with petrolatum gauze. The operative field is then sealed by a plaster cast to insure complete rest. The wound thus remains bathed in its own fluids. The cast is removed and the wound repacked when the odor becomes too foul or if the temperature of the patient becomes elevated. This method is thought to produce an autovaccination. There have been many favorable reports of the Orr treatment and it is widely used at this time. It has been employed in the Orthopedic Clinics at the University Hospital and at Children's Hospital in Columbus for the past four years with some good end-results.

1. Starr, C. L., in Lewis: Practice of Surgery **2**, chapter 2.
2. Nichols, E. H.: Acute, Subacute and Chronic Infectious Osteomyelitis, J. A. M. A. **42**: 439-464 (Feb. 13) 1904.
3. Orr, H. W.: Surg., Gynec. & Obst. **29**: 492 (Nov.) 1919, and other publications.

THE BAER TREATMENT OF OSTEOMYELITIS

The use of blow fly larvae in the treatment of osteomyelitis was suggested to Dr. Baer[4] by his observations of maggot-infested wounds in 1917. The patients with compound fractures who arrived at the base hospitals with wounds so infested seemed to him to be in unusually good condition. Their freedom from complications, and subsequent smooth convalescence, were in sharp contrast to the general average. As a result of these observations made during the war period, he began, about three years ago, the use of larvae in the treatment of chronic osteomyelitis. His experience in eighty-nine cases has recently been presented in a posthumous report,[4] together with the technical details of preparing the larvae for use and the handling of them in relation to the wound. He was convinced that this method of treatment gave a more rapid and permanent healing in a large percentage of cases than any used previously in his clinic. The use of larvae as directed by Dr. Baer is strictly an after-treatment, and surgery is a necessary preliminary in all cases.

In October, 1930, a study of the Baer method of treatment for osteomyelitis was undertaken at Ohio State University as a cooperative project between the Department of Zoology and Entomology and the Departments of Medical and Surgical Research and of Clinical Orthopaedic Surgery in the College of Medicine. This arrangement has made possible a complete series of studies, beginning with the rearing of the flies and ending with the treatment of patients in the hospital.

Two species of flies have been used, Lucilia seracata and Phormia regina. The methods developed for rearing the flies and other experimental work in connection with the production of sterile cultures of maggots for clinical use have been presented in some detail in another communication.[5] It is essential that adequate precautions be taken to insure the absence of both aerobic and, more particularly, anaerobic (B. tetani and B. welchii) bacterial contaminants in all cultures of maggots destined for implantation in human cases.

As the clinical demand for larvae naturally fluctuates considerably, according to the number of patients, it has been important to develop some method of storage. It has been found that in larvae which have been allowed to feed normally at room temperature (28 C.), development can be halted by reducing the temperature to 8 or 10 C. They have been implanted after three to five weeks of such storage and found to have four or five days of scavenger activity before pupation.

CLINICAL RESULTS

The treatment has been used in twenty-six unselected clinical cases so far. Of these, twenty-two are healed without a sinus. Baer's technic has been observed and carefully followed. Surgical preparation of the wound prior to implantation is necessary. This consists of a wide opening of the soft tissues, a curved incision being made when possible, sometimes even a moderate amount of soft tissue being incised. Sequestrums, if present, are removed. In the deeper-seated lesions we are beginning the use of self-retaining wire retractors as a means of maintaining exposure. The wound is then packed with dry gauze. This is removed in from two to three days and the first implantation of larvae is made. The skin edges are covered with adhesive plaster and the wound is enclosed with cages

4. Baer, W. S.: J. Bone & Joint Surg. **13**: 438 (July) 1931.
5. Miller, D. F.; Doan, C. A., and Wilson, E. H.: Ohio J. Sc. **32**: 1, 1932.

of fine wire, which is supported by a square wall of sponge rubber also fastened with adhesive plaster. Implantations are made from test tubes instead of from flasks, and a gallbladder spoon was found to be the most convenient instrument for this purpose. The wound is redressed every three to five days, according to the survival period of each larval implantation. As they reach maturity the larvae wander out of the wound, and their appearance in any numbers outside the dressing is an indication of approaching pupation. The larvae are washed out of the wound at the end of each treatment, a clean, dry dressing is applied, and the patient is given a rest of twenty-four hours before the next implantation.

The early cases demonstrated the importance of gaining some experience in the method. For instance, it was found that too immature larvae failed to survive the change of environment when placed in a fresh wound. Seventy-two hour old cultures were found to be most desirable. The age of the larvae becomes less important after several implantations in a given case. This may be due to the gradual increase in alkalinity reported by Baer, and also observed in this series, since it has been shown that larvae thrive best in an alkaline medium. Larvae will not live in the presence of excessive acid secretions. Irrigation of such wounds with Seiler's solution, which is mildly alkaline, was carried out just before implantation, following which the larvae were able to maintain themselves. Quantity is an important factor, and we feel that very large numbers of larvae are necessary in the early stages when necrotic tissue is plentiful. In the later stages of healing it must be remembered that overcrowding may cause the larvae to leave their food before they are fully developed.

It is very important that free drainage be secured. Any accummulation of pus in a wound may lead to drowning of the maggots. In a subacute case in the lower leg we were unable to establish the maggots until a counterincision had been made through the calf of the leg for insertion of a drain. This acted as a sewer, prevented accumulation of pus, and allowed the larvae to sustain themselves.

The series studied consists of twenty-six cases, of which twenty-two are known to be healed at this time without a sinus. Seven children and nineteen adults are included. The healed cases comprise lesions involving the femur in five cases, the tibia in twelve, the radius in two, and the ulna, humerus and a metatarsal bone in one each. Some of these cases were of long standing. One, in particular, involved the middle of the shaft of the femur in a man, aged 50. It dated back seven years and represented the recurrence of a childhood lesion. We had some difficulty in keeping the wound open and yet complete healing occurred in ten weeks and the lesion has remained healed for six months up to and including the present writing. Another patient, aged 21 years, with multiple sinuses, presented a lesion involving the ilium and upper end of the femur. Convalescence was slower in this instance, requiring three months altogether. The wound has now remained healed approximately four months.

There was a recurrent lesion of the tibia in a man, aged 24. He was operated on by one of us (E. H. W.) four years ago and treated by the Orr method. His healing time then was seventeen weeks and his lesion remained inactive for three years. The recurrence at the time of the second operation was altogether similar to that seen four years previously. Maggot treatment was used after an identical surgical procedure, and healing was complete in eight weeks.

A woman, aged 38, had a lesion of the upper end of the femur, of three years' duration, with sinuses front and back. The hip was opened from in front, while counterdrainage was made posteriorly because of the presence of a large amount of pus. Healing occurred in eight weeks. The bone was not badly involved in this patient and we were content to open the soft tissues, merely exposing the surfaces of the areas of diseased bone. The joint was not involved.

The children, with one exception, all presented lesions that had been in existence for from three months to one and one-half years. One of these involved the upper end of the tibia and had been previously operated on in our clinic without success.

One of the children, a boy, aged 3 years, was admitted with an acute osteomyelitis. His temperature at the time of operation was 104.5 F. and the white count was 52,000. His lesion was in the lower end of the femur and had progressed rapidly during the five days prior to admission. Pus was found in the bone marrow on drilling through the shaft and cultures were positive for Staphylococcus aureus. With the maggot treatment, he was completely healed in six weeks. We cannot but feel that this child was helped by his youth and a favorable type of infection, and that because of these factors there was very little thrombosis of the blood supply to the bony cortex. Baer thought that the larvae when used in acute osteomyelitis speeded up sequestration, but he did not observe that the separation of necrosed bone was prevented by this treatment.

All of the cases treated thus far in children have proceeded promptly to uneventful healing in an average time of nine weeks.

We are impressed by the rapid improvement in the appearance of the wounds undergoing larval treatment. When the postoperative packing is removed there appears a crater-like wound the bottom of which is made up of bare osseous tissue. This may be partially covered with detritus and pus. Usually by the end of the second implantation, small islands of granulation tissue are seen to be growing out of the exposed bony surface and also growing in from the sides of the wound like a pannus. As the treatment proceeds, this raw area becomes covered over with bright red granulation tissue. The entire wound at this time is bathed with a clear, glistening fluid, which gives a striking sheen to all the tissues. If the treatment is discontinued at this point, a few drops of surface pus will gradually form, and the dressing will show considerable moisture. By the end of the fourth week of treatment, the wound shows only a slight depression, and is only about half of the original circumference. The epithelium at this stage of healing shows rapid proliferation. The number of larvae implanted must necessarily be lessened because of the reduced size of the wound, or even discontinued altogether. A slight surface infection may remain which, according to Baer, consists of the presence of Bacillus proteus. It has been our practice to apply zinc oxide dressings at this time, changing them once a week. In from three to four weeks the wound is completely covered with new epithelium, and thereafter all dressings are discontinued.

There have been four patients in this series who for one reason or another do not represent an entirely satisfactory end-result; two represent frank failures; the others were under observation and treatment for insufficient periods of time. A man, aged 44, presented

a lesion of twenty-two years' duration involving the upper end of the femur and the ilium with fusion of the hip joint. The surgical problem was trying. Three or four sinuses were posterior, the other anterior. The Smith-Peterson incision offered the only method of laying the area wide open. This patient received eight implantations of maggots before leaving the hospital. At that time all his posterior sinuses were healed and he presented healthy granulations anteriorly. Unfortunately, he left the city at once and we have been unable to trace him.

A man, aged 30, had an acute recurrence of an old lesion involving the entire upper end of the tibia, including the knee joint. His leg was opened widely but the pus was so plentiful that the larvae drowned at each implantation. Ultimately, posterior drainage solved this problem. The lesion then cleaned up rapidly, and the cavity was filling in with healthy granulation tissue. Unfortunately, he became homesick and summarily departed from the hospital, his leg in a cast. This patient may yet be included in the list of healed cases.

A frank failure occurred in a girl, aged 12, with a sinus of twelve years' duration in the popliteal space. The drainage was thin and scanty. Roentgen examination showed dense eburnation of the bone with a cavity the size of a pea on the posterior aspect of the femur just above the posterior capsular attachment. Using the exposure of A. K. Henry,[6] we obtained complete access to the involved area and obliterated the cavity by the use of the chisel. Following the operation, three or four cultures of larvae died in the wound after implantation. This was the first case in the series. Whether the larvae we used were too immature, or whether alkalization of the wound might have helped we are unable to say. The surgical problem was severe, the wound was difficult to keep open, and the chance of failure under the best circumstances would always be great.

Another case of failure can, we believe, be ascribed to too extensive an operative procedure in the presence of an acute exacerbation of the disease. This was an old recurrent lesion of the humerus in a youth, aged 17. The present lesion had been draining for three years. On admission there was some abscessing of the wound with a large superficial pus sac. Because of the superficial nature of this abscess, we paid it insufficient notice. On opening it we also excavated the underlying bone cavity. Within forty-eight hours there was a copious discharge of thick, white pus. The usual implantation of maggots was made but the thick discharge continued and did not subside into the usual thin, clean exudate. The wound filled in with healthy granulation tissue but a persistent sinus remains. In this case a fundamental rule in the treatment of chronic osteomyelitis was violated. In the presence of an acute exacerbation of the disease, no operation should be performed on the bone tissues. We feel that this failure is the result of erroneous judgment at the time of the operation and not to be attributed to the method of treatment. The patient is still under observation, and healing may yet be promoted.

We are unable to offer an unequivocal opinion on the ultimate value of this form of treatment as yet. The early results would tend to show that it is at least as effective as any method of treatment used heretofore. The healing time for all cases averaged ten weeks. The shortest period of healing was four weeks in a child, aged 8 years. In one case a lesion of the hip joint required three months before the epithelium became definitely closed. The type of scar observed in these cases is a distinct improvement over that usually seen. The granulation tissue fills up the wound from the bottom, leaving no retracted areas, and with apparently a good blood supply, which should be favorable in tending to prevent recurrence. There was not a single case of secondary abscessing, such as we have observed in other forms of treatment. In no case has a metastatic lesion developed. The main factors involved in bringing about healing by this method are probably the scavenger activity of the maggots in removing devitalized tissue favorable for bacterial growth, and the production of an increasingly alkaline reaction in the wound.

With the cooperation of Prof. William A. Starin of the Department of Bacteriology, it has been proved that there is no demonstrable bacteriophage agent present in the larvae that would account for their favorable action. The possible involvement of an additional factor or factors that contribute to the healing process offers opportunity for further studies in the promotion of healing. Such studies are now in progress.

The success or failure of any form of treatment will usually vary directly with the judgment used in meeting the problems encountered. Failure should always cause one to review his method of attack with great care. We cannot but feel in the present series of cases that the expectations might have been carried to a more successful conclusion could we have known the potential causes of failure, which are now apparent.

SUMMARY

1. Twenty-two of twenty-six children and adult patients, with either acute or chronic osteomyelitis, have been successfully treated with fly larvae during the past eighteen months in the university osteomyelitis clinics.

2. The average healing time for all cases has been ten weeks; for those lesions occurring in children, seven weeks.

3. The type of scar remaining is a distinct improvement in that there is an obliteration of the cavity occasioned by operation and the disease process through the ingrowth of healthy granulation tissue with at least partial restoration of the blood supply.

4. The best surgical judgment must always be exercised in the individual case and precede the after-treatment with fly larvae, if satisfactory results are to be obtained.

395 East Broad Street.

6. Henry, A. K.: Exposure of Long Bones, New York, William Wood & Co., p. 22.

The Mental Attitude of the Patient.—The introvert, or more especially the timid person, is prone to exaggerate each sensation and to give it undue importance; or to misinterpret the significance of symptoms and use them for some selfish purpose. The extroverts may have a nobler attitude. They disregard their symptoms, discountenance the importance of their illness, continue to perform their duties and interfere deplorably with the somatic efforts of adaptation to the injury. The course and picture of disease is thus affected and modified in a thousand different ways by the mental attitude of the patient. Our efforts to understand sickness and to relieve suffering must be directed to both mind and body and to the "wholeness" of the individual, where intellectual and emotional processes often need more attention than the physical.—Longcope, W. T.: Methods and Medicine, *Bull. Johns Hopkins Hosp.* **50**:4 (Jan.) 1932.

GASTRIC MUCIN IN THE TREATMENT OF PEPTIC ULCER *

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Clinical and experimental observations have indicated that a mechanical and a chemical factor are important in the healing of gastric ulcers and ulcers of the upper intestinal tract. All widely used medical managements, whether using intensive alkalization, as in Sippy's method, or following the methods of Lenhartz and Smithies, avoid trauma caused by coarse and irritating foods.

Ivy and Fauley,[1] in their experimental work, have demonstrated that the mechanical, chemical and mucosal susceptibility factors are most important in the etiology of intestinal ulcers following gastroenterostomy. They demonstrated that roughage in the diet is conducive to the formation of a chronic gastric ulcer in rabbits.

Kim and Ivy,[2] by using mucin, prevented the formation of ulcers in dogs with biliary fistula, whereas 60 per cent of the dogs developed ulcers when not fed mucin.

Fogelson [3] has shown gastric mucin to be an aid in the treatment of ulcer by the rapid and complete relief of symptoms. He concluded that the mucin coated the ulcer and protected it against the proteolytic action of the gastric secretion. It neutralizes the corrosive action of gastric juice through its high combining power for free acid, and prolongs the rate of dialysis of pepsin-hydrochloric acid through the protective mucin layer.

Mucin, therefore, could be logically entered into any ulcer regimen as an integral part, since its mechanical protective action and its combining power are essentials common to all treatments.

The necessity of neutralization of the acid gastric juice is still open to question, though, should it be desired, mucin is ideal for this purpose, since it has a high buffer value for acid and does not disturb the body chemistry. It, therefore, seemed advisable to study the action of mucin on gastric acidity before offering it as an improvement for the widely used alkalization.

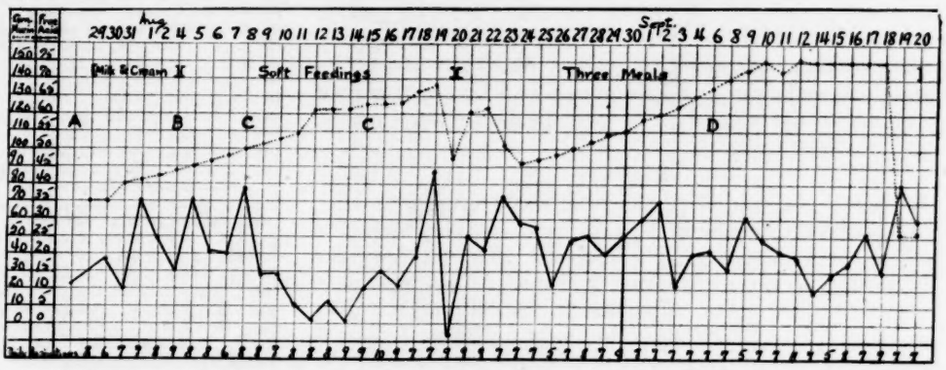

Chart 2 (case 2, gastrojejunal ulcer).—Daily average acidity of hourly samples until 9 p. m. with varying amounts of mucin: solid line, free acid; dotted line, mucin; *A*, gastric analysis; *B*, no spontaneous pain; *C*, acid test positive; *D*, acid test negative.

METHOD OF EXPERIMENT

Forty-three patients with history, signs, symptoms, laboratory evidence and roentgen manifestations of peptic ulcer have been treated with mucin in this series. These patients were chosen because all the evidence concurred in the diagnosis.

The therapeutic dosage of mucin totaled 90 Gm. a day, but three patients received as much as from 150 to 238 Gm. a day in a study of the effect on the gastric acidity.

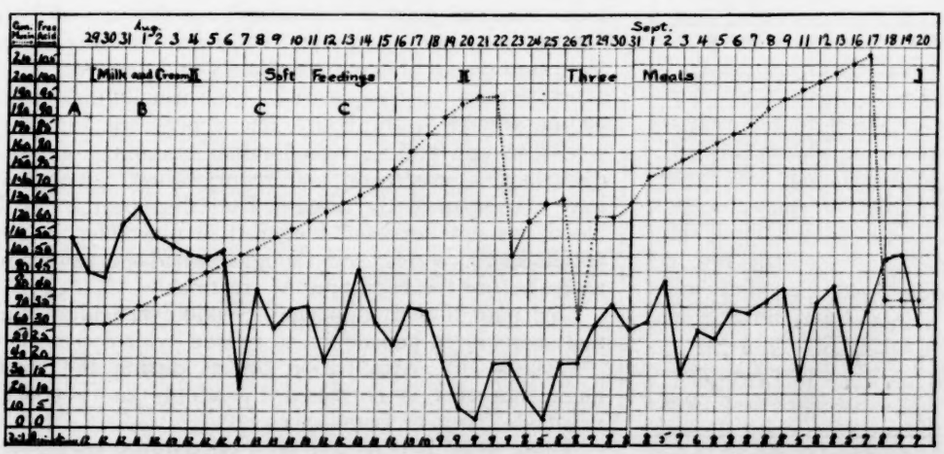

Chart 1 (case 1, duodenal ulcer).—Daily average acidity of hourly samples until 9 p. m. with varying amounts of mucin: solid line, free acid; dotted line, mucin; *A*, gastric analysis; *B*, no spontaneous pain; *C*, acid test negative.

Ewald, fractional and motor test meals were given, and the stools examined for occult blood.

The "acid test" as suggested by Palmer [4] was used at first and later modified to coincide with Hardy's technic.[5] The patient swallows a Rehfuss tube and the stomach is emptied of its fasting contents. Two hundred cubic centimeters of 0.5 per cent hydrochloric acid is then introduced through the tube. At the end of each half hour, if no pain has been complained of, the stomach is emptied and the acid is again introduced. The test is regarded as negative if after the third dose the patient does not experience pain identical in kind with his previous symptoms. If pain is produced, it is relieved by emptying the stomach. This test was not used as a diagnostic procedure but as an index of the desensitization of the pain mecha-

* From the Medical Department, Northwestern University Medical School.

1. Ivy, A. C., and Fauley, G. B.: Factors Concerned in Determining the Chronicity of Ulcers in the Stomach and Upper Intestine, Tr. Am. Gastro-Enterol. A. **33**: 81-93, 1930.
2. Kim, M. S., and Ivy, A. C.: The Prevention of Experimental Duodenal Ulcer by Feeding Neutral Gastric Mucin, J. A. M. A. **97**: 1511-1513 (Nov. 21) 1931.
3. Fogelson, S. J.: Treatment of Peptic Ulcer with Gastric Mucin, J. A. M. A. **96**: 673 (Feb. 28) 1931.
4. Palmer, W. L.: The Value of Acid Neutralization in the Treatment of Gastric and Duodenal Ulcers, Arch. Int. Med. **46**: 165-179 (Aug.) 1930.
5. Hardy, T. L.: The Rôle of Hydrochloric Acid in the Causation of Gastric Pain, Lancet **1**: 711 (April 6) 1929.

nism in patients who had a positive "acid test" before treatment.

The scheme of management was as follows: In the hospital group, 120 cc. of milk and cream with mucin was given hourly from 7 a. m. to 7 p. m., together with from one to five additional feedings of cereal, soft eggs, or custard. In addition, mucin was given in capsules or in water every hour from 7:30 a. m. to 9:30 p. m. (Capsules were found to be inefficient. Some capsules pass through the stomach undissolved, and others remain as a mass of mucin through which the acid cannot penetrate.) Hourly samples were withdrawn from the stomach in order to determine the exact level of gastric acidity from hour to hour. In the ambulatory group three meals with cooked vegetables and fruits and meats were allowed, and one-half ounce (15 Gm.) of mucin was taken in water or milk with meals, between meals, and in the evening.

RESULTS

Charts 1, 2 and 3 portray the daily average acidity of hourly samples until 9 p. m. with varying amounts of mucin. These charts indicate that in vivo the buffering action of commercial mucin does not vary directly with the amount of mucin fed, although it does in vitro. This probably is due to stimulation from the small amount of secretogogues in the mucin and the mechanical distention. The time of disappearance of spontaneous pain and the obtaining of a negative "acid test" is also shown. The spontaneous pain disappeared in from three to five days in these patients. The positive "acid test" disappeared in ten days in case 1 and was still positive in seventeen days in case 2 (jejunal ulcer), while in case 3 there was a negative "acid test" even though there was spontaneous pain. In all cases pain disappeared and negative "acid test" was obtained even though anacidity was not maintained. The length of time necessary to obtain a negative "acid

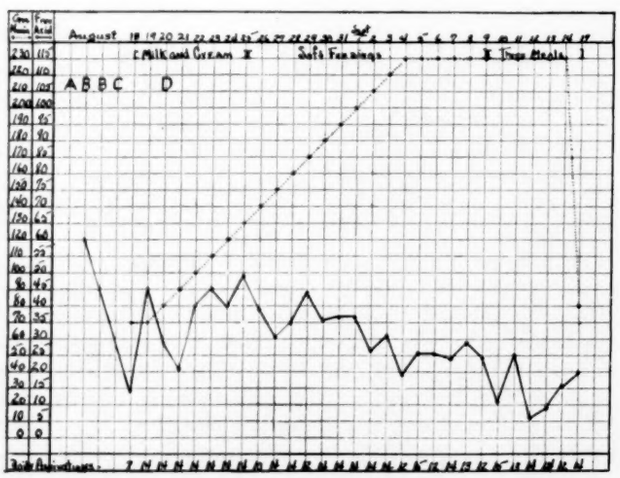

Chart 3 (case 3, duodenal ulcer with pseudodiverticulum).—Daily average acidity of hourly samples until 9 p. m. with varying amounts of mucin: solid line, free acid; dotted line, mucin; *A*, spontaneous pain; *B*, gastric analysis; *C*, acid test negative; *D*, no spontaneous pain.

test" in the jejunal ulcer case is not surprising in view of the observations of Ivy and Fauley that the jejunal mucosa of the dog is more sensitive to the irritating action of the gastric contents than the duodenal mucosa.

Charts 4, 5 and 6 demonstrate the free acidity curve of (*a*) the lowest "acid day" on mucin, (*b*) the highest "acid day" on mucin, (*c*) a control of hourly doses of from 40 to 60 grains (2.6 to 4 Gm.) of calcium carbonate, and (*d*) a comparison of the acidity on days with a high and a low dosage of mucin. These curves indicate that the acidity of the gastric contents may vary markedly from hour to hour despite a constant intake of mucin or calcium carbonate. Although extremely large doses of calcium carbonate may maintain constant anacidity of the gastric contents in some patients, as demonstrated with 60 grains (4 Gm.) every hour, the large dose of 40 grains (2.6 Gm.) every hour did not maintain anacidity. The patient receiving 60

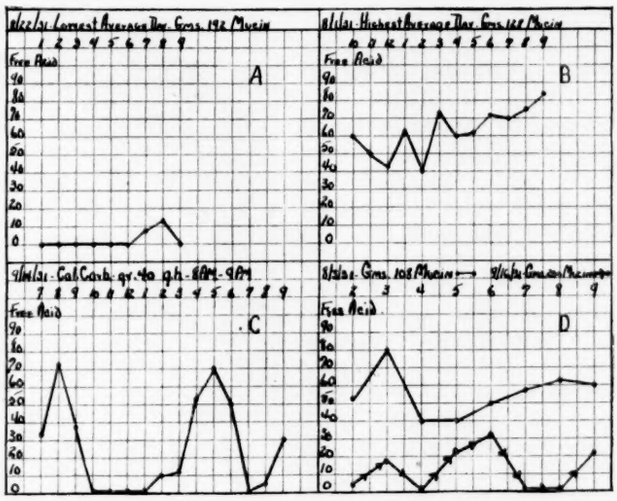

Chart 4 (case 1, duodenal ulcer).—Free acidity: *A*, lowest "acid day" on mucin; *B*, highest "acid day" on mucin; *C*, control of hourly doses of 40 to 60 grains (2.6 to 4 Gm.) of calcium carbonate; *D*, comparison of acidity on days with a high to a low dosage of mucin.

grains (4 Gm.) developed severe headache, nausea, and marked gastric retention. Since the peak of acidity is not always at 9 p. m. but at variable times, one or two daily aspirations may not give a true impression of the daily acidity curve.

During the treatment the first change noted is a diminution of pain at night and an absence of pain during the period of the day that mucin is being taken. Vomiting ceases almost immediately and does not occur after the pain has disappeared. Pain usually disappears by the second or third day, but it persisted for three weeks in one patient. Abdominal cramping, gaseous disturbances, eructation and regurgitation, which may have accompanied the disease, later disappear. Occult blood has not persisted longer than nine days in any patient in this series, even though six had severe hemorrhage before the beginning of treatment.

One patient with duodenal pseudodiverticulum formation required belladonna to relieve pylorospasm.

Occasionally, constipation occurs during the treatment, but this is corrected by adding more cooked vegetable, fruit or fruit juices.

Those patients that have been reexamined roentgenographically (eighteen cases) have apparently manifested less spasm. Some have a smaller defect or complete disappearance of the niche as objective proof of the healing of ulcer concomitant with clinical improvement and absence of epigastric tenderness. None have had a larger niche or more spasm.

All patients have continued treatment throughout the observation period, which has varied from three to twelve months. While on treatment they have remained symptom free, but a patient with jejunal ulcer had pain one week after the dose was decreased from 90 to 8 Gm. a day after two months of treatment. A patient with duodenal ulcer and diverticulum formation had

pain beginning twenty-three days after the daily dosage had been decreased from 90 to 8 Gm. after two months of treatment. Both of these patients had complete relief in two days after resuming 90 Gm. daily. It is interesting to note that, although the latter patient had a negative "acid test" while having spontaneous pain before mucin, the "acid test" was positive while the patient had pain during the recurrence but became negative within five days after an "adequate dosage" of mucin was resumed.

Classification of Forty-Three Cases of Ulcer

Total number of patients	43	
Types of ulcers:		
Uncomplicated duodenal ulcers	15	
Gastric ulcers	2	
Marginal or jejunal ulcers:		
Following gastro-enterostomy	2	
Following partial resection	2	
Gastro-enterostomy "done and undone" with recurrence	3	
Hemorrhage:		
Acute, massive	6	
Previous hemorrhages	6	
Pseudodiverticulum formation	4	
Penetrating ulcers	3	
Average duration of pain	5.2	years
Average duration of pain after mucin	1.7	days
Previous hospitalization (35 patients)	208	weeks
Mucin hospitalization * (8 patients)	25	weeks
Number of patients having previous treatment without relief	15	
Number of patients having previous treatment with recurrences	20	
Number of patients having previous gastric surgery	7	

* Three of these patients were hospitalized a total of eighteen weeks for experimental purposes.

I have encountered no patient who, when properly instructed, has refused to take mucin, or in whom it has caused disagreeable effects when sufficiently detailed attention has been given to its administration. Mucin is not, however, a "fool proof" therapeutic agent that can be prescribed and then the patient forgotten.

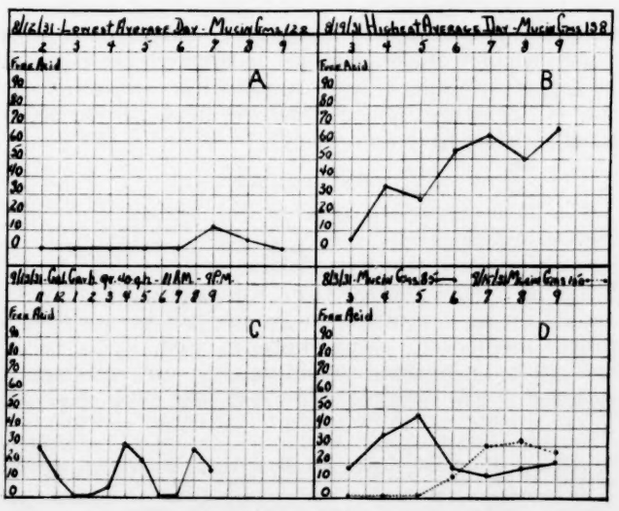

Chart 5 (case 2, gastrojejunal ulcer).—Free acidity: *A*, lowest "acid day" on mucin; *B*, highest "acid day" on mucin; *C*, control of hourly doses of 40 to 60 grains (2.6 to 4 Gm.) of calcium carbonate; *D*, comparison of acidity on days with a high to a low dosage of mucin.

Four patients who had developed alkalosis on moderate doses of alkali have been greatly benefited by the mucin treatment with no further disturbance to the body chemistry.

The forty-three patients in this series became symptom free within an average period of 1.7 days. Palmer's alkali group of twenty-seven patients became symptom free in an average of 2.8 days and the beef tea group (twenty-seven patients) in 26.6 days. All of his patients were hospitalized.

The types of ulcers treated in this series are tabulated in the accompanying table. The average duration of ulcer history, which was 5.2 years, indicates the marked chronicity of the ulcer diathesis in this group. Eighteen of the patients were awakened by pain suggesting gastric retention or continued secretion. Thirty-five of the patients in this series had previous medical

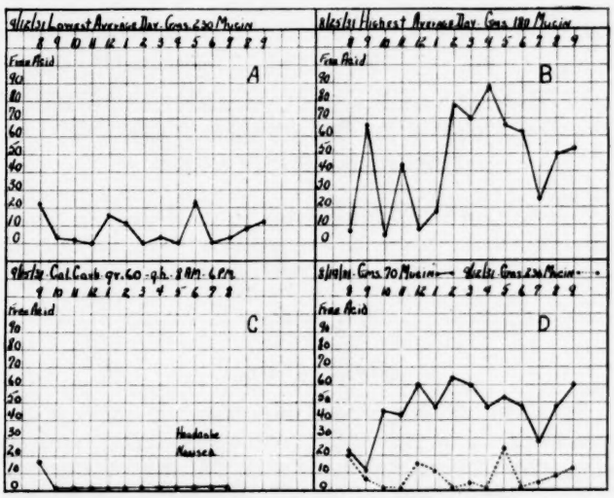

Chart 6 (case 3, duodenal ulcer with pseudodiverticulum).—Free acidity: *A*, lowest "acid day" on mucin; *B*, highest "acid day" on mucin; *C*, control of hourly doses of 40 to 60 grains (2.6 to 4 Gm.) of calcium carbonate; *D*, comparison of acidity on days with a high to a low dosage of mucin.

management, spending a total of 208 weeks in hospitals, an average of 5.9 weeks per patient. All obtained relief on mucin with a total of twenty-five weeks of hospitalization, an average of 0.71 week per patient. Fifteen, having distress while on medical management when first seen, were continued ambulatory and obtained complete relief with mucin.

According to Palmer, the "acid test" remained positive for a week after distress disappeared in patients on the "Sippy treatment" but became negative at about the time the distress disappeared spontaneously. He concluded that this difference was due to more prompt relief induced by alkali therapy. The relation between the disappearance of spontaneous and induced distress in our patients paralleled that obtained with alkalis. This indicates that the relief obtained was not a spontaneous remission.

Although any form of therapy may bring about a remission, there is no doubt that remarkable results have been obtained in patients who were previously having distress on dietary or alkali management. The time of observation has been too short to prove that the improvement is permanent in a disease in which the natural history is so variable. The ultimate success of any treatment depends on the frequency of recurrence of ulcers in the same or different locations in ulcer-bearing individuals. However, I feel fully justified in believing that mucin treatment is conducive to healing.

ADDENDUM

At the time at which the proofs of this article were submitted, eighty-five patients had been treated and essentially the same results had been obtained. Another patient was seen in consultation suffering from a jejunal ulcer following gastro-enterostomy performed two years before. A carcinoma was suspected, but an operation was refused. The patient was

receiving intensive alkali management and had marked ascites and edema of the lower extremities. On mucin therapy, relief from pain, vomiting, edema and ascites was obtained. Death occurred two and one-half months later. Postmortem examination revealed three healed jejunal ulcers, a healed duodenal ulcer, a patent gastro-enterostomy opening, the jejunum adherent to the colon, and carcinoma of the head of the pancreas. At the time of instituting mucin therapy and obtaining complete relief from pain, vomiting, edema and ascites there was a high gastric acidity. The relief of ulcer symptoms therefore cannot be attributed to the carcinoma producing anacidity.

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THE DANGERS OF USING IMPURE MUCIN IN THE TREATMENT OF PEPTIC ULCER *

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Recently while studying the effect of mucin in the treatment of peptic ulcer, we noticed that patients responded differently to different batches of the substance. With some samples of the material the patients appeared to be helped, and with others they seemed definitely to be harmed. When we averaged the free gastric acidity found in all the cases treated with mucin, we found it to be 31 points higher than it was in a group of patients treated with the usual diet and alkaline powders. In some cases in which the patients were receiving 100 or more Gm. of mucin each day the gastric acidity rose much as it does after an injection of histamine.

These observations led us to make an investigation into the possible causes of the bad effects obtained with some batches of the substance. We began using mucin test meals, in which from 50 to 100 Gm. of mucin was given instead of the usual Ewald meal. In some instances the acid curves were as high as those obtained when histamine was used. We then postulated that the amount of secretagogue present in some of these samples of mucin must be extremely great and that, before mucin could be used generally, it would be necessary to ascertain the nature of this secretagogue and to effect measures to rid such mucin of the presence of these objectionable substances.

First, we wished to determine the secretagogic effect of mucin when it was given orally to animals. It was found that the curves of acidity of samples of gastric content, removed at intervals of fifteen minutes after the ingestion of a standard test meal of meat, were greatly elevated and prolonged when 10 Gm. (dry weight) of mucin was added to the test meal, and that they closely approximated the curves obtained when 150 mg. of histamine was added to a similar meal.

Since the physical characteristics of mucin made it difficult to use it in further tests for secretagogues, it was dialyzed through a collodion bag in water for a few hours, the procedure being carried out in the refrigerator to minimize bacterial action. The reaction of the dialysate was then adjusted to a p_H of 7, and a series of biologic tests was applied. It was found to have the following actions:

It produced relaxation of the perfused uterus of the virgin rat and spasm of the uterus of the virgin guinea-pig. When given intravenously, it produced an effect on the blood pressure of the etherized and atropinized cat and of the anesthetized rabbit and dog, identical with that produced by pure solutions of histamine. It caused fatal bronchospasm when administered intravenously to a guinea-pig. On intracutaneous injection in man, it caused a typical wheal and erythematous flare. On subcutaneous injection in the dog, it stimulated gastric secretion. These reactions are identical with those produced by histamine. Furthermore, like histamine, this substance was not altered by boiling, and when a dose was given repeatedly to the same animal, the response could be repeated in identical form time and again. The latter peculiarity distinguishes histamine from most tissue extracts, peptones, and so forth. Moreover, like histamine, it gave a positive Pauly [1] reaction. The Zimmermann [2] reaction could not be applied because of the impurity of the solution.

Since chemical assay is unreliable with present methods, the dialysate was assayed biologically by comparing its effect on blood pressure with that of known amounts of pure histamine. The largest amount of secretagogue that we were able to dialyze from the mucin was the equivalent of approximately 3 mg. from each gram of dry mucin. This means that patients who were receiving 240 Gm. of this preparation a day were likewise receiving, inadvertently, secretagogue equivalent to at least 700 mg. of histamine. It is small wonder, with such dosage of a powerful secretagogue, that it was impossible to control gastric acidity.

Not all lots of commercial mucin, however, contained secretagogue in this concentration, and one lot that was examined contained only a negligible amount. The fact that different batches contain varying amounts of this substance suggests that it is present as a contaminant, not as a necessary ingredient. Unquestionably, a purer product can be obtained if greater care is taken in its preparation. Some manufacturers are now putting out a washed mucin which we hope will be better than what we have been using.

CONCLUSIONS

We have demonstrated in certain specimens of commercial mucin the presence of large amounts of a secretagogue which by biologic tests seems to be histamine. The presence of this substance may be looked on as a contaminant which can be avoided if proper methods of preparation are used.

Until a consistently standardized, pure product is supplied, it will be impossible to evaluate the therapeutic use of mucin.

* From the Section on Gastro-Enterology, the Mayo Clinic, and the Division of Experimental Surgery and Pathology, the Mayo Foundation.

1. Pauly, Hermann: Ueber die Einwirkung von Diazoniumverbindungen auf Imidazole, Ztschr. f. physiol. Chem. **44**: 159-160, 1905.
2. Zimmermann, Walther: Ueber eine spezifische Farbenreaktion für Histamin, Ztschr. f. physiol. Chem. **186**: 260-262, 1930.

Fear.—The one outstanding condition menacing the mental health of every one, at least apparently of every youth, is some form of the emotion of fear, if not acute fear, at least a sense of insecurity. This is reflected in pessimists and sentimentalists who demand a world according to their own wishes, as well as in ordinary men of affairs. At adolescence it seems well-nigh universal. The great remedy for this fear is the attainment of the scientific attitude, together with the insight that in any case one's task is worth doing. By the scientific method truth and a knowledge of reality can be obtained.—Burnham, W. H.: The Wholesale Personality. New York: D. Appleton & Co., 1932, p. 329.

Clinical Notes, Suggestions and New Instruments

REPAIR OF A TORN PATELLAR LIGAMENT

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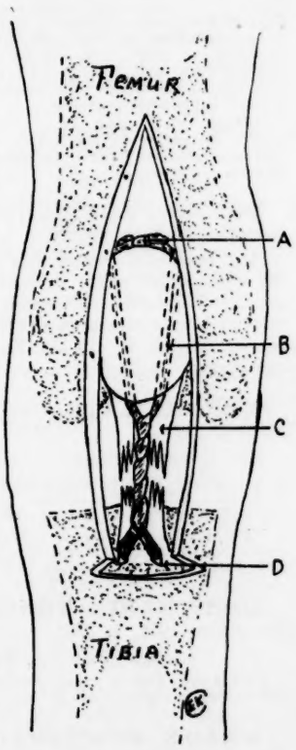
SCHENECTADY, N. Y.

This paper is presented to describe a case of a ruptured patellar ligament and to detail its successful repair.

Patellar tendons can be torn either by direct or by indirect violence. Direct violence presupposes a blow by a sharp instrument capable of severing the majority of the fibers of the tendon. Such an injury usually opens the knee joint and the ligamentous rupture becomes secondarily important. Fractures by indirect violence are much more common. If the leg is fixed and the quadriceps is caused to contract sharply, great strain is brought either to the patellar ligament or to the quadriceps tendon. The torque of the falling body, the contracting quadriceps and the extraneous forces determine the location of the tear. In the case reported, the patellar tendon was struck a direct blow, insufficient in force to break the skin but fixing the patellar ligament firmly against the tibial head and so determining the point of rupture. This mechanism combines both the direct and the indirect method of tearing.



Details of procedure: *A*, ends of the graft firmly fixed in quadriceps; *B*, tunnels in patella; *C*, patellar ligament reefed over fascia lata graft; *D*, tunnel in tibia.

In repairing the ruptured patellar tendon of the case described, a 1 inch transverse incision was made directly across the tibia at the midlevel of the tibial tuberosity. From the middle of this incision a vertical section of the skin was carried upward to well above the patella. Through this incision the frayed out tendon and the anterior surface of the patella were seen. Two oblique divergent drill holes were passed upward from the distal to the proximal margin of the patella. A three-sided tunnel was then cut through the tibia, directly under the tuberosity, with an osteotome. The remains of the patellar ligament were split in the long axis from the kneecap downward and retracted laterally.

Two half-inch bands of fascia were sutured end to end, producing a strip about 16 inches long. A free end of the fascial transpant was passed through the tibial tunnel, braided on its fellow, and the two free ends were carried upward through the drill holes previously cut in the patella. These were drawn taut with the knee in full extension, sutured to themselves and embedded into the quadriceps tendon.

The vertically sectioned patellar tendon was then sutured firmly, with the fascia lata transplant as a core.

The skin and subcutaneous tissues were closed in layers without drainage, and the knee was put in a 5 degree flexion in a plaster cylinder.

REPORT OF CASE

G. W., a man, aged 55, a farmer, was kicked by a cow, May 2, 1931, the hoof striking him directly on the right patellar ligament. He recoiled sharply and escaped from the maddened animal but was unable to walk. He was seen by a local physician, who treated him without fixation for two months. At that time the patient had a painless knee which could be passively moved through the normal range but in which active extension was totally lost. A lateral roentgenogram showed a slight clearing of the right infrapatellar space. Aug. 13, 1931, the patient was operated on, the technic previously described being used. He was kept in plaster fixation until early in October. The postoperative course was uneventful. On removal of the knee from the plaster, the quadriceps atrophy precluded much active motion, but the knee could be fully extended passively and flexed passively to 30 degrees. Exercises for the quadriceps were prescribed. After one month the patient bore weight painlessly and could extend the leg against moderate resistance. Since that time, recovery has been rapid and the patient is now able to go about his ordinary activities without any disability save moderate limitation of full active extension, which disability is also rapidly disappearing.

146 Barrett Street.

ANTERIOR COLPOCELE DUE TO FIBROMYOMA *

WENDELL DOWNING, M.D., LE MARS, IOWA

The occurrence of a tumor beneath the base of the bladder causing an anterior colpocele is very rare, judging by an extensive review of the literature. When such tumors do occur, they are usually fibromas or myomas. In the following case a fibromyoma produced an anterior colpocele, and a mistaken diagnosis of cystocele was made as it was noticed soon after labor.

A white woman, aged 23, with a negative past history, entered the hospital, May 23, 1931. The patient had her first labor, June 10, 1928. The delivery was normal and a slight perineal tear was sutured. About two months after the labor she first began to notice a bulging of the anterior vaginal wall when straining or when on her feet. The swelling could easily be pushed back, but it slowly became larger and inconvenienced her when on her feet. There were no urinary symptoms except for slight frequency and burning.

Jan. 20, 1930, the patient had a laparotomy performed by a surgeon in another state. The bladder, which was said to be very large, was advanced on the uterus. A vaginal plastic operation was not done. When she first got on her feet after operation, the swelling was present as before. January 10, her menstrual period was missed, and during the pregnancy which ensued the colpocele slowly increased in size. October 8, the patient was delivered of an 8 pound (3,629 Gm.) boy. The labor was normal, and the swelling which pushed out in front of the head did not greatly interfere with the delivery. Following the labor there was no apparent increase in the size of the mass. It protruded when she walked or strained but could easily be returned to the vagina. She had some frequency and burning and could urinate more easily if the mass was pushed back into the vagina.

General physical examination was negative except for a lower abdominal scar. On pelvic examination there was a moderate gaping of the introitus, and the perineum showed a slight tear. There was no rectocele. The anterior vaginal wall was thickened and when the patient strained the wall bulged through the introitus. The swelling was diffuse and extended from 2 cm. posterior to the external urethral meatus to the cervix and laterally almost to the ischial tuberosities. It was soft and could easily be returned to the vagina. The cervix showed a unilateral laceration and the uterus was of normal size and position and was not prolapsed. The urine was normal except for a few pus cells. No cystograms were made and a sound was not introduced into the bladder. A diagnosis of cystocele was made.

The anterior vaginal wall was incised in the median line from near the external urethral meatus to the cervix. There was a definite line of cleavage between the vaginal wall and the underlying mass, which slipped beneath the finger and which felt and looked like the base of the bladder.

As the dissection continued laterally and toward the cervix, the mass was found to be a tumor flattened out between the vaginal wall and the bladder, narrowing into a pedicle which was 10 mm. wide and 3 mm. thick. The pedicle extended up behind the right pubic ramus into the soft tissues. Few blood vessels entered the tumor mass, which was not encapsulated.

* From the Le Mars Clinic.

At this time 12 ounces of water was instilled into the bladder, none of which entered the tumor mass and a sound in the bladder showed its base in normal location. Grossly the tumor resembled the bladder, from which it was easily freed. The pedicle of the tumor was ligated as high up as possible and the tumor removed. The excess vaginal wall was excised and the wall sutured.

Grossly, the tumor was pear shaped and was 15 cm. long, 8 cm. wide and 2 cm. thick. Its weight was 120 Gm. It was soft, gray and of uniform structure and could easily be separated into sections. The microscopic examination was made by Dr. E. T. Bell of the University of Minnesota, who reported as follows: "The greater part of the tumor is a soft fibroma. Scattered through it are numerous bundles of smooth muscle. Diagnosis, fibromyoma."

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

BISMO-CYMOL.—A basic bismuth salt of camphocarboxylic acid (camphor-3-carboxylic acid) having the probable formula $(C_{10}H_{15}OCOO)_2BiOBi(C_{10}H_{15}OCOO)OH$. It contains between 37 and 40 per cent of bismuth.

Actions and Uses.—Bismo-cymol is proposed as a means of obtaining the systemic effects of bismuth in the treatment of syphilis (see general article, Bismuth Compounds, New and Nonofficial Remedies, 1931, p. 94). Bismo-cymol belongs to the class of fat-soluble bismuth compounds which, because of their solubility, are absorbed more rapidly than insoluble bismuth salts, approaching that of soluble bismuth salts, and which are not likely to cause abscess formation. Though animal experiments seem to show a low toxicity for this preparation, in human beings it is well to watch the gums closely for evidence of beginning stomatitis.

Dosage.—Bismo-cymol is injected intramuscularly in doses representing 0.1 Gm. of metallic bismuth once a week or in doses representing 0.05 Gm. of metallic bismuth twice a week for from six to eight weeks.

Manufactured by Abbott Laboratories, North Chicago. U. S. patent applied for. U. S. trademark applied for.

Bismo-Cymol Ampoules, 1 cc.: Each ampule contains bismo-cymol equivalent to 0.05 Gm. of metallic bismuth, dissolved in olive oil.

Bismo-Cymol Ampoules, 2 cc.: Each ampule contains bismo-cymol equivalent to 0.1 Gm. of metallic bismuth, dissolved in olive oil.

Bismo-cymol occurs as a white powder having the odor of camphor. It is insoluble in water but soluble in ether, benzene and vegetable oils.

Heat 1 Gm. of bismo-cymol in 30 cc. of water containing 3 cc. of hydrochloric acid, add ammonia water until resulting solution is alkaline to litmus, filter and wash the precipitate with 7 cc. of water; to the filtrate add hydrochloric acid until just acid to litmus, evaporate on the steam bath until the volume is reduced one half, cool, filter and dry the crystals; the crystals melt at 127 C. Dissolve 0.1 Gm. of the crystals in 5 cc. of alcohol, add a drop of diluted ferric chloride solution (ferric chloride solution diluted 1 to 5); a green color results. Dissolve the precipitate (obtained from the treatment with ammonia water) in diluted hydrochloric acid and pass in hydrogen sulphide; a black precipitate forms. Suspend 0.2 Gm. of bismo-cymol in 10 cc. of boiling water and add 2 Gm. of sodium hydrosulphite; a black precipitate forms.

Add 5 cc. of sodium hydroxide solution and about 0.2 Gm. of aluminum wire to about 0.2 Gm. of bismo-cymol; heat gently: the vapors do not turn red litmus blue (*nitrate*). Suspend 0.25 Gm. in 30 cc. of water, add 4 cc. diluted nitric acid, boil, cool, filter and add 1 cc. of silver nitrate solution: no more turbidity is produced than in the U. S. P. test for chlorides using 0.1 cc. of fiftieth normal hydrochloric acid (*chloride*). Suspend 0.1 Gm. in 30 cc. of water, add 4 cc. of diluted hydrochloric acid, boil, cool, filter, add 1 cc. of barium chloride solution and dilute to 50 cc.: no turbidity is produced in ten minutes (*sulphate*). Add 2 cc. of nitric acid to 2 Gm. of bismo-cymol in a porcelain crucible, evaporate to dryness on the steam bath, ignite, add 5 cc. of hydrochloric acid and 10 cc. of a saturated solution of stannous chloride in hydrochloric acid: the mixture does not darken in thirty minutes (*arsenic*). Ignite 3 Gm. of bismo-cymol in a quartz crucible, cool, add drop by drop just enough nitric acid to dissolve the residue when warmed, pour the acid solution into 100 cc. of distilled water, evaporate to 30 cc., filter if necessary and divide into 5 cc. portions. To one portion add an equal quantity of diluted sulphuric acid: the liquid does not become cloudy (*lead*). To another portion add an excess of ammonia water: the liquid does not exhibit a bluish tint (*copper*). To another portion add 0.5 cc. of diluted hydrochloric acid: a precipitate insoluble in an excess of hydrochloric acid and soluble in ammonia water is not formed (*silver*).

Transfer about 0.2 Gm. of bismo-cymol, accurately weighed, to an Erlenmeyer flask, add 1 Gm. of powdered potassium permanganate and then 5 cc. of diluted sulphuric acid, allow to stand ten minutes, add 10 cc. of sulphuric acid in small portions, allow to stand fifteen minutes, decolorize with hydrogen dioxide, add 25 cc. of water, boil for fifteen minutes, pass in hydrogen sulphide until the bismuth is completely precipitated, filter through a prepared gooch crucible, wash with water, alcohol, chloroform and ether in this order, dry in an oven for thirty minutes at 100 C., cool in a desiccator and weigh; repeat the washing with chloroform and ether and the drying at 100 C. until constant weight is attained. The weight of bismuth sulphide corresponds to not less than 37 nor more than 40 per cent bismuth.

ANTIPNEUMOCOCCUS SERUM (See New and Nonofficial Remedies, 1931, p. 357).

Mulford Biological Laboratories, Sharp & Dohme, Philadelphia and Baltimore.

Pneumococcus Antibody Globulin Type I-Mulford.—Prepared by immunizing horses with intravenous injections of cultures of Type I and Type II pneumococci. When test bleedings show the serum to have reached a sufficient degree of potency for type I pneumococcus, the horses are bled aseptically and the serum is refined and concentrated by the method of Lloyd D. Felton (*J. Infect. Dis.*, December, 1928, p. 543). The finished product contains type II pneumococcus antibodies, but not in therapeutically important amounts. The usual sterility and safety tests are made by injection into white mice and guinea-pigs. Standardization is effected on the basis both of the mouse protection test and by a specific polysaccharide precipitation test devised by Zozaya, Boyer and Clark (*J. Exper. Med.*, October, 1930, p. 471). The potency of the product is expressed in terms of the unit described by Felton (*J. Infect. Dis.*, September, 1925, p. 199; October, 1925, p. 309; J. A. M. A., June 14, 1930, p. 1893), this unit being the amount of type I pneumococcus antibody that will protect mice against one million fatal doses of the culture. It is marketed in packages containing 10,000 and 20,000 units of type I pneumococcus.

Dosage.—First dose, 10,000 units, followed by a second dose of 20,000 in one hour; the second dose is repeated at intervals of from four to eight hours until the temperature falls and beneficial effects are evident.

POLLEN ANTIGENS-NATIONAL (See New and Nonofficial Remedies, 1931, p. 29).

Also marketed in packages of one 5 cc. vial containing 25 units per cubic centimeter; in packages of four 1 cc. syringes, containing 150 units per cubic centimeter; and in packages of sixteen 1 cc. syringes containing, respectively, 2.5, 5, 10, 15, 22.5, 30, 40, 50, 50, 50, 50, 75, 75, 75, 100, and 100 units per cubic centimeter.

MERTHIOLATE (See New and Nonofficial Remedies, 1931, p. 282).

The following dosage forms have been accepted:

Merthiolate Ophthalmic Ointment, 1:5000: Contains merthiolate 1 part, in 5,000 parts of a base consisting of liquid petrolatum and wool fat with small amounts of paraffin, white petrolatum and ceresin.

Tincture Merthiolate, 1:1000: Contains merthiolate, 0.1 Gm., and monoethanolamine, 0.1 Gm., dissolved in alcohol, 50 cc.; acetone, 10 cc., and water, sufficient to make 100 cc.

DIPHTHERIA TOXOID (See New and Nonofficial Remedies, 1931, p. 370).

The National Drug Co., Philadelphia.

Diphtheria Toxoid: Also marketed in packages of five immunization treatments, consisting of one vial, containing ten human doses.

MEAD'S POWDERED BREWER'S YEAST (See Revised Supplement to New and Nonofficial Remedies, 1931, p. 18).

The following dosage form has been accepted:

Mead's Brewer's Yeast Tablets: Each tablet contains Mead's powdered brewer's yeast, 0.4 Gm. (6 grains).

POTASSIUM BISMUTH TARTRATE-D. R. L. (See New and Nonofficial Remedies, 1931, p. 102).

The following dosage form has been accepted:

Ampules Potassium Bismuth Tartrate-D. R. L., 2 cc.: Each ampule contains potassium bismuth tartrate-D. R. L., 0.05 Gm., in isotonic solution.

CORRECTION

Ferro-Copral Tablets.—In the report of the Council on Pharmacy and Chemistry "Ferro-Copral Tablets Not Acceptable for N. N. R." (THE JOURNAL, March 5, p. 816) the claimed amounts of two of the ingredients (saccharated ferric oxide-N. F. and manganese citrate) were incorrectly reported as respectively 1 and 10 grains per tablet. The report should have brought out that the tablets are stated to contain saccharated ferric oxide-N. F. 10 grains and manganese citrate 1 grain. The report was also incorrect in that the copper proteinate constituent of the tablets was stated to have been prepared by the interaction of egg albumin and copper citrate. The report should have brought out that the copper proteinate was stated to have been prepared by the interaction of egg albumin and copper acetate.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

PENICK GOLDEN SYRUP

(Corn Syrup and Sugar Refiners' Syrup)

Distributor.—Penick and Ford Sales Company, Inc., Cedar Rapids, Iowa.

Description.—A table syrup; corn syrup flavored with refiners' syrup.

Manufacture.—The corn syrup ingredient is prepared by hydrolysis of corn starch with 0.05 per cent hydrochloric acid. The mixture is cooked under pressure at about 140 C. until the starch has been sufficiently hydrolyzed to produce a definite percentage of reducing sugars as dextrose on the basis of the solids content of the final product. The mixture is almost completely neutralized with sodium carbonate, and the solution is filtered through vegetable carbon to remove suspended substances and coloring matter. The filtered water clear liquid is concentrated in "vacuum" pans to a definite density and is then mixed with a small proportion of refiners' syrup conforming to the United States Department of Agriculture standard for that product. The mixture is heated to 80 C. and automatically filled into friction top cans. The cans are not artificially cooled; thus they remain at the elevated temperature for a considerable period, which destroys almost all microorganisms.

Analysis (submitted by manufacturer).—

	per cent
Moisture	23.8
Ash	0.6
Fat (ether extract)	0.0
Protein (N × 6.25)	0.1
Reducing sugars, as dextrose	32.9
Sucrose (copper reduction method)	3.0
Dextrins, by difference	39.6

No methods are available for accurately determining the composition of syrups of this nature; therefore the foregoing analysis is roughly approximate.

Calories.—3 per gram; 85 per ounce.

Claims of Manufacturer.—A syrup for cooking, baking and table use. It is suitable as a carbohydrate supplement for milk modification for infant feeding.

GOLD MEDAL BISQUICK

(Gold Medal "Kitchen Tested" flour, vegetable shortening, phosphate, sugar, dry skim milk, salt, soda)

Manufacturer.—Gold Medal Foods, Incorporated, a wholly owned subsidiary of General Mills, Inc., Minneapolis.

Description.—A self-rising flour containing sesame or hydrogenated cottonseed oil shortening, acid phosphates, sucrose, skim milk powder, salt and baking soda; especially prepared for biscuits.

Manufacture.—The non-fat ingredients are thoroughly mixed in a batch-mixer; the shortening is added and all are again thoroughly mixed.

Analysis (submitted by manufacturer).—

	per cent
Moisture	10.2–10.5
Ash	6.2– 6.7
Fat (ether extract)	12.0–12.7
Protein (N × 5.7)	7.5–10.0
Reducing sugars as dextrose	0.3– 0.5
Sucrose	3.0– 3.2
Crude fiber	0.2– 0.3
Carbohydrates other than crude fiber (by difference)	63.9–59.8

Calories.—3.9 per gram; 111 per ounce.

Claims of Manufacturer.—A self-rising flour containing shortening already "worked in" and requiring only admixture with water or milk for the preparation of biscuits.

BIXLER'S KEW BEE BREAD

Manufacturer.—Bixler Baking Company, Youngstown, Ohio.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, patent flour of northwest and southwest wheats, water, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride, and potassium bromate, are mixed in a high speed mixer. The sponge dough is fermented for from four to five hours, after which are added flour, water, salt, sucrose, lard, powdered skim milk and malt syrup to make the completed dough, which is cut into pieces of desired weight. The pieces are fermented for a short time, molded into loaf form, panned, fermented, baked for from thirty to thirty-five minutes, cooled, and wrapped in wax-paper.

The factory, equipment and storage rooms are kept in strictly sanitary condition.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	33.7
Ash	0.9
Fat (direct ether extraction method)	0.9
Protein (N × 6.25)	9.9
Crude fiber	0.3
Carbohydrates other than crude fiber (by difference)	54.3

Calories.—2.7 per gram; 77 per ounce.

Claims of Manufacturer.—A bread of good quality.

MEAD'S POWDERED LACTIC ACID MILK (WHOLE MILK CULTURED)

Manufacturer.—Mead Johnson and Company, Evansville, Ind.

Description.—Powdered spray-dried whole milk which has been cultured with Streptococcus lactis and incubated to a high lactic acid content; packed in an atmosphere of nitrogen in hermetically sealed tins.

Manufacture.—Milk from tuberculin tested cows is collected under supervised conditions; is tested for bacteria, fat, odor, acidity and sediment; is filtered, standardized to 3.5 per cent fat content, pasteurized at 71 C. for thirty minutes, partially evaporated, and cooled to 20 C. Streptococcus lactis is added, after which the milk is incubated for twelve to fourteen hours at 20 C. until such acidity is attained which produces an acidity of 2.5 per cent as lactic acid in the finished powder. The incubated milk is homogenized by being forced through small apertures under high pressure and is sprayed into a current of cleaned, washed, heated air in a drying chamber. The milk solids are collected, examined by the laboratory to determine whether it fulfils standard requirements and packed in an atmosphere of nitrogen in hermetically sealed tins.

Analysis (submitted by manufacturer).—

	per cent
Moisture	1.5
Ash	6.0
Fat	28.0
Protein (N × 6.38)	26.8
Lactose (by difference)	35.2
Titratable acidity as lactic acid	2.5
Calcium (Ca)	0.95
Phosphorus (P)	0.67
Magnesium (Mg)	0.08
Sodium (Na)	0.50
Potassium (K)	1.29
Sulphur (S)	0.04
Chlorine (Cl)	0.78
Iron (Fe)	0.002
Copper (Cu)	0.0005
(Analysis of normal dilution, 1 ounce + 7 ounces water)	
Ash	0.8
Fat	3.5
Protein (N × 6.38)	3.3
Lactose	4.4
Titratable acidity as lactic acid	0.3
pH	4.7

Calories.—5.1 per gram; 145 per ounce.

Micro-Organisms.—Manufacturer guarantees that the product contains no pathogenic bacteria.

Vitamins.—The vitamins A and B (complex) of the milk used are practically unchanged; vitamin C is slightly affected.

Claims of Manufacturer.—This product is for infant feeding in accordance with a physician's instructions.

ROCKWOOD'S PURE COCOA

A Blend of Natural and Dutch Process Cocoas (Flavored)

Manufacturer.—Rockwood and Company, Brooklyn.

Description.—A mixture of natural cocoa with "Dutch process" cocoa containing less cocoa fat than standard "breakfast cocoa"; flavored with vanillin.

Manufacture.—This cocoa is a mixture of natural cocoa with a lesser quantity of Dutch process cocoa.

The natural cocoa is prepared from cleaned and thoroughly roasted cacao nibs. The roasted beans are quickly cooled with air and are crushed by machine. The cacao shells are separated from the cacao nibs by forced air drafts. The broken nibs are further cleaned by bolting in cylinders of various mesh screens. The Dutch process cocoa is prepared from cleaned, roasted cacao nibs freed of shell as described above. The broken nibs are heated in a boiling solution of ammonium bicarbonate, are removed and dried.

The mixture of the natural cacao nibs with a lesser quantity of the treated cacao nibs are ground to form chocolate "liquor" which contains approximately 54 per cent cacao butter. A portion of the cacao butter is expressed from the liquor, the amount depending on the percentage of fat desired in the resulting "press" cake, which is ground to a fine powder and cooled, powdered vanillin being added for flavoring purposes. The powder is "wind sifted," by which procedure a current of air of definite velocity is played on the cocoa so that the fine particles are carried to a certain height, blown into a hopper and conveyed to storage tanks. The heavy particles are taken off at a lower level and reground. The final cocoa powder is automatically packed in paper cartons.

Analysis (submitted by manufacturer).—

	per cent	(moisture-fat free basis)
Moisture	4.7	...
Total ash	5.7	6.7
Ash insoluble in acid	0.1	0.2
Fat	10.8	...
Protein (non-caffeine and theobromine N × 6.25)	22.1	...
Total nitrogen	4.3	...
Crude fiber	5.7	6.8
Carbohydrates other than crude fiber (by difference)	48.5	...
Theobromine (Wadsworth method)	2.1	...
Caffeine (Wadsworth method)	0.4	...
Alkalinity of the soluble ash (cc. of N — acid required to neutralize ash of 100 grams of cocoa)	21	26
Alkalinity of the insoluble ash	54	62

Calories.—3.8 per gram; 108 per ounce.

Claims of Manufacturer.—A low fat cocoa with less fat than standard "breakfast cocoa"; suitable for all table uses of cocoa.

KOHN'S PAN DANDY BREAD

Manufacturer.—Kohn's Bon Ton Baking Company, Austin, Texas.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, patent flour, water, salt, malt syrup, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, are mixed in a high speed mixer. The sponge dough is fermented for from four to five hours, after which are added flour, water, sucrose, salt, malt syrup, lard, yeast and powdered skimmed milk to make the completed dough, which is cut into pieces of desired weight. The pieces are fermented for a short time, molded into loaf form, panned, further fermented, baked for from thirty to thirty-five minutes, cooled, and wrapped in wax-paper.

The factory, equipment and storage rooms are kept in strictly sanitary condition.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	35.3
Ash	1.1
Fat (ether extraction method)	1.4
Protein (N × 6.25)	9.2
Crude fiber	0.2
Carbohydrates other than crude fiber (by difference)	52.8

Calories.—2.6 per gram; 74 per ounce.

Claims of Manufacturer.—A bread of good quality.

S. M. A.

A food for infants—derived from tuberculin tested cows' milk, the fat of which is replaced by animal and vegetable fats including biologically tested cod liver oil; with the addition of milk sugar, potassium chloride and salts; all together forming an antirachitic food. When diluted according to directions it is essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and in most physical properties.

Manufacturer.—S. M. A. Corporation, Cleveland.

Description.—A dried powdered homogenized mixture of skim milk, lactose, beef fat, coconut oil, cocoa butter, cod liver oil and potassium chloride. The chemical constants of the fat are similar to those of human milk fat.

Manufacture.—The milk used is collected in accordance with the provisions of the sanitary code of the Cleveland Board of Health and pasteurized by the holding system (see announcement of acceptance of SMACO (200) Whole Milk Sterilized, THE JOURNAL, Sept. 12, 1931, p. 781).

Calculated quantities of liquid skim milk (prepared by centrifugating whole milk), beef fat, coconut oil, cocoa butter, cod liver oil, lactose and potassium chloride are mixed, homogenized, pasteurized and spray dried by being forced through small apertures into chambers containing hot air currents. The final dried powder is packed in cans which are "vacuumized," filled with nitrogen gas to prevent oxidation of fats and vitamins and hermetically sealed.

Analysis (submitted by manufacturer).—

	per cent
Moisture	1.
Ash	2.
Fat (ether extract)	28.
Protein (N × 6.38)	10.
Lactose (by difference)	59.
Approximate chemical constants of S. M. A. fat:	
Saponification number	206
Iodine number	50
Polenske number	2
Reichert-Meissl number	2
Melting point	37° C.
S. M. A. diluted with water according to directions:	
	per cent
Ash	0.2–0.3
Fat (ether extract)	3.5–3.6
Protein (N × 6.38)	1.3–1.4
Lactose (by difference)	7.3–7.5
p_H	6.8–7.0

Calories.—5.3 per gram; 151 per ounce.

After dilution, 20 calories per fluidounce.

Vitamins.—The product contains sufficient cod liver oil to be antirachitic and antispasmophilic for the majority of babies.

Micro-Organisms.—The method of preparation assures the absence of pathogenic organisms.

Claims of Manufacturer.—S. M. A. prepared according to directions approximates human milk in percentages of fat, protein, lactose and ash; the chemical constants of the fat are similar to those of human milk fat; the p_H, specific gravity and caloric value are also similar to those of human milk. The buffer value is low. Properly fed, it prevents rickets and spasmophilia for the majority of babies. It should, however, be supplemented with orange juice or other adequate source of vitamin C. It is intended for infants deprived of human milk.

S. M. A. may be used for infants of any age, either when human milk is not available at all, or as a supplement to human milk; it should be used when the infant is still well, or in the milder type of malnutrition in infants.

REX DEPENDABLE FLOUR (BLEACHED)

Manufacturer.—Royal Milling Company, Associate Company of General Mills, Inc., Minneapolis.

Description.—A patent flour for bread baking in the home.

Manufacture.—See this section for Gold Medal "Kitchen-Tested" Flour (THE JOURNAL, Oct. 3, 1931, p. 1002).

Analysis (submitted by manufacturer).—

	per cent
Moisture	13.0 –14.5
Ash	0.38– 0.44
Fat (ether extract)	0.8 – 1.2
Protein (N × 5.7)	12.0
Crude fiber	0.3 – 0.5
Carbohydrates other than crude fiber (by difference)	73.5 –71.4

Calories.—3.5 per gram; 99 per ounce.

Claims of Manufacturer.—An "all purpose" flour for use in home baking; standardized in baking characteristics for uniform performance under normal home baking conditions.

REPORTS OF OFFICERS

NOTE.—At the 1925 session of the Association, the House of Delegates suggested that all reports of officers, committees, etc., and resolutions to be brought before the House, if available, be published in advance of the session so as to permit careful consideration and discussion. — Ed.

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the American Medical Association:

The following report of the Secretary is respectfully submitted:

MEMBERSHIP

There were 99,470 names enrolled on the list of members of the Association on March 1, 1932, as compared with 98,807 on the same date in 1931. The report submitted to the House of Delegates at the 1931 annual session presented the number of members on April 1 but, since the annual session is held one month earlier this year, it became necessary to submit the count of members as taken on March 1. From Jan. 1, 1931, to Jan. 1, 1932, the names of 546 new members were added to the official list, while the names of 1,411 deceased members were removed.

From time to time interested members and officers of component societies and constituent associations insistently suggest that the membership of the Association should be very much larger. From time to time, also, there is exhibited an ardent desire to effect large increases in memberships of component societies, and the procedure which has come to be known as the "membership drive" is resorted to for this purpose.

There can be no doubt that there are many physicians in the United States and its territories who are not affiliated with medical organization and who would make desirable members. A careful study of all the facts involved, however, would probably lead to the conclusion that the potential membership of the Association can hardly exceed 110,000 at any time within the near future, even though the physicians eligible for membership could be brought into affiliation.

According to the American Medical Directory (Twelfth Edition, compiled in the 1931) there are 159,109 physicians in the United States and in its territorial possessions in which constituent associations have been organized. This number includes the young and the old, the active and the retired, those of one race and another, the eligible and the ineligible. It includes the members of several large groups that are engaged in teaching or are in institutions for research or in government services or in the employment of institutions and organizations of various kinds. Many of those included in these groups find it impracticable, if not impossible, to secure and maintain membership since they are not registered physicians in the states or territories in which they reside and carry on their activities. It is difficult to estimate with any degree of accuracy the number of inactive and retired physicians who do not care to continue membership, but there are probably not less than six to seven thousand in this category. It is equally difficult to estimate with accuracy the number of young physicians who have not applied for membership because they are not yet able without undue sacrifice to stand the expense involved. There is also a considerable number of older physicians who withhold themselves from membership for similar reasons. Among the physicians listed in the American Medical Directory are approximately 11,000 young men who are serving as interns and resident physicians in hospitals, many of whom are not now eligible for membership. In about one third of the states, eligibility is determined on the basis of racial lines. Finally, there are the members of the group, deplorably large in number, who could not secure membership did they undertake to do so because they could not qualify as desirable applicants. In the light of the facts here presented, it does not appear to be probable that the total membership of the American Medical Association can be made to exceed 110,000, even if all the possibilities short of taking "undesirables" into membership were exhausted.

It is true beyond any question that every effort should be made to bring into membership all physicians who are eligible and whose accession would add to the strength of medical organization and help to extend its beneficial influences. It is equally true, however, that to take into membership men whose moral and professional qualifications are not of a high order and whose regard for professional ethics and professional ideals is small or entirely wanting would seriously impair the strength of our societies and would materially lessen their helpful influence.

Quality rather than quantity should be the determining factor in the matter of membership. There would seem to be no good

Organization of Constituent State Associations

	Number of Counties in State	Number of Component Societies in State	Organization of Constituent State Associations: Number of Counties in State Not Organized		Number of Physicians in State 12th Ed. A.M.A. Directory	Number of Members of State Associations: April 1, 1931	March 1, 1932	Number of A.M.A. Fellows in State
			1931	1932				
Alabama	67	67	..	..	2,207	1,672	1,577	509
Arizona	14	12	1	1	494	283	353	223
Arkansas	75	64	10	9	1,977	1,012	851	395
California	58	39	15	15	10,109	5,019	5,077	3,772
Colorado	63	25	22	22	1,898	1,114	1,107	724
Connecticut	8	8	..	..	2,165	1,396	1,411	952
Delaware	3	3	..	..	278	173	178	114
Dist. Columbia	..	..	..	..	1,827	645	660	543
Florida	67	35	19	19	1,762	1,033	972	528
Georgia	161	98	50	49	2,888	1,763	1,843	691
Idaho	44	11	2	2	383	165	183	116
Illinois	102	92	7	5	11,382	7,371	7,304	5,191
Indiana	92	81	3	3	4,073	2,775	2,792	1,647
Iowa	99	97	..	..	3,125	2,308	2,425	1,476
Kansas	105	61	32	32	2,168	1,537	1,466	879
Kentucky	120	114	4	4	2,867	1,866	1,821	746
Louisiana	64	42	19	20	2,076	1,296	1,237	710
Maine	16	15	1	1	989	742	717	388
Maryland	23	22	..	..	2,480	1,490	1,462	870
Massachusetts	14	18	..	..	6,595	4,671	4,760	2,994
Michigan	83	54	5	5	5,589	3,435	3,507	2,387
Minnesota	87	36	2	2	3,075	2,266	2,251	1,580
Mississippi	82	21	3	3	1,567	1,067	1,010	324
Missouri	115	90	16	16	5,640	3,361	3,316	1,996
Montana	56	15	28	28	484	325	312	216
Nebraska	93	52	24	26	1,785	1,196	1,143	772
Nevada	17	5	12	12	131	96	107	67
New Hampshire	10	10	..	..	567	485	495	253
New Jersey	21	21	..	..	4,357	2,807	2,768	1,988
New Mexico	31	12	19	19	374	226	215	149
New York	62	60	1	1	21,008	12,846	13,070	9,057
North Carolina	100	89	2	2	2,372	1,698	1,622	751
North Dakota	53	13	10	10	515	413	383	293
Ohio	88	86	2	2	8,653	5,547	5,470	3,335
Oklahoma	77	64	12	12	2,484	1,634	1,612	885
Oregon	36	16	4	4	1,275	685	684	509
Pennsylvania	67	62	4	4	12,051	7,973	7,970	5,625
Rhode Island	5	6	1	1	844	441	491	358
South Carolina	46	42	1	1	1,292	857	823	360
South Dakota	69	12	12	12	585	322	303	237
Tennessee	95	65	15	18	2,962	1,647	1,547	727
Texas	254	134	73	64	6,475	3,835	3,702	1,950
Utah	29	8	20	20	489	366	363	227
Vermont	14	10	3	3	499	343	341	192
Virginia	100	52	12	12	2,584	1,830	1,830	921
Washington	39	22	15	15	1,920	1,368	1,404	897
West Virginia	55	29	5	5	1,782	1,142	1,187	655
Wisconsin	71	51	1	1	3,104	2,203	2,166	1,469
Wyoming	24	9	13	13	234	153	148	99
Canal Zone, Panama, Guam, Samoa, V. I.	..	..	..	..	91	140	131	23
Alaska	..	..	..	..	47	19	22	12
Hawaii	5	4	1	1	288	179	187	93
Porto Rico (Dist.)	7	7	..	..	359	302	295	69
Philippine Islands (Provinces)	56	9	47	47	1,825	426	399	46
Foreign	..	..	..	..	.....	.....	.....	135
Total	3,142	2,070	548	541	159,050	99,964	99,470	62,125
Commissioned Medical Officers and Honorary Fellows								2,587
								64,712

reason for the institution of membership "drives" since such movements are not entirely free from danger. It would be preferable if there were a continuous effort to bring into membership all qualified and reputable physicians who are eligible and to retain them as long as they live up to the conditions of membership.

A number of county medical societies have established special membership classifications through which interns, teachers, research workers and others not eligible for regular membership may have affiliation and receive some of the benefits of society effort, as well as to make their own contributions in the common cause.

FELLOWSHIP

The number of Fellows enrolled on March 1, 1932, was 64,712, which is 224 less than the number of Fellows as of April 1, 1931, reported at the Philadelphia Session. During the year, 4,124 names were removed from the Fellowship roster, while 3,900 were added; 697 Fellows died; 670 names were dropped for nonpayment, and the names of 754 Fellows were removed from the roster because they were no longer eligible.

An accompanying table shows the number of counties in each state and territory, the number of component medical societies in the several states and territories, the number of members in each constituent medical association at the time the count was made, and the number of Fellows including Honorary Fellows and commissioned medical officers of government services.

AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Dr. D. E. Sullivan, New Hampshire, gave notice at the 1931 annual session of the House of Delegates that a proposal to amend section 2 of article 5 of the Constitution would be submitted to the House in 1932. Under this proposed amendment, the medical director of the United States Veterans' Administration would be made a member of the House of Delegates.

Dr. J. Gurney Taylor, Wisconsin, served notice at the Philadelphia session of submission to the House of Delegates in 1932 of a proposed amendment to section 1, chapter IV of the By-Laws changing the method of making nominations for the office of President-Elect.

The House of Delegates at the annual session in Philadelphia adopted a resolution submitted by Dr. Isaac A. Abt, delegate from the Section on Diseases of Children, providing that the name of that Section be changed to "Section on Pediatrics." As the sections of the Scientific Assembly are specifically named in section 1, chapter XIV, of the By-Laws, it will be necessary for the By-Laws to be amended in order that the change contemplated under the resolution introduced by Dr. Abt and adopted by the House of Delegates may be effected.

RESOLUTIONS TO BE SUBMITTED TO THE HOUSE OF DELEGATES

The following resolutions to be submitted to the House of Delegates have been received by the Secretary and have been printed in the AMERICAN MEDICAL ASSOCIATION BULLETIN for February, 1932.

A resolution received through the Secretary of the Michigan State Medical Society reads as follows:

WHEREAS, The present unrest is bringing forth an increasing discussion and demand for some form of federal dole for relief of the indigent, and

WHEREAS, There is increasing agitation and solicitation that federal and state government provide a system of medical care for the people in some form or other similar to the British and French enactments, and

WHEREAS, Our only informative data emanate from outside organizations or individuals often biased or socialistically inclined, and

WHEREAS, The American Dental Association has through its own representatives investigated and compiled information and facts regarding the effects and results of doles and the British panel system on the practice of dentistry, therefore be it

Resolved, That the delegates of the Michigan State Medical Society to the American Medical Association be and are hereby instructed to introduce the following resolution in the House of Delegates of the American Medical Association and to use their best efforts to secure its adoption; and be it

Resolved, That the Board of Trustees of the American Medical Association be requested to institute immediately a survey and compile facts on the effect of doles and federal health and sick benefit appropriations and administration on the practice of medicine in England and France, and to compile a summary on the effect such systems would have on medical practice and scientific progress in the United States; and be it

Resolved, That this information be made available to state medical societies.

The following resolution was transmitted to the Secretary by Dr. G. Henry Mundt, delegate from Illinois.

Resolved, That it is the opinion of the House of Delegates of the American Medical Association that physicians on the staffs of hospitals approved for intern training by the Council on Medical Education and Hospitals should be limited to members in good standing of their local county medical societies and that the House of Delegates request the Council on Medical Education and Hospitals to take this opinion under advisement.

DUAL MEMBERSHIP

In some instances, members of the American Medical Association have been officially enrolled as members in more than one constituent state medical association. This appears to be in violation of the intent of the law of medical organization in the United States. The matter is discussed in the report of the Judicial Council.

A constantly recurring question has to do with the jurisdiction of the component societies of counties located on state lines. In many instances, physicians have their homes in one state and maintain offices and practice in an adjoining county of another state. Under the provisions of the by-laws of county medical societies generally in force, a physician who desires to hold membership must be affiliated with the component society of the county in which he resides. Many physicians prefer to have affiliation with the component societies of the counties in which their offices are located and in which their practice is done. Occasionally it is very difficult for physicians residing near a state line to participate actively in the work of the component societies of the counties in which they actually reside, whereas it would be easily possible for them to maintain active affiliation with the component societies of adjoining counties in other states.

It is necessary, for the purposes of efficient organization, that jurisdiction over membership shall be definitely established, and it would seem desirable that constituent associations consider the advisability of amending their by-laws to provide that physicians residing on or near state lines may hold membership in the societies of adjacent states when jurisdiction over their membership has been officially waived by the societies of the counties and states in which they actually reside.

ELECTION AND REGISTRATION OF DELEGATES

Each year one or more of the constituent state medical associations hold annual meetings at a time so near the date of the annual session of this House of Delegates that they cannot comply with the specific provisions of the By-Laws of the American Medical Association, which require that the official Certificate of Election of Delegates shall be in the hands of the Secretary not later than seven days prior to the first day of the first meeting of the House of Delegates.

The By-Laws of the American Medical Association do not define any particular method for the election of delegates by constituent associations but have been generally interpreted to mean that such delegates should be elected by the houses of delegates of the constituent associations. When meetings of state medical associations are held too late to make it possible for delegates to be elected and reported to the Secretary of the American Medical Association as required by the By-Laws, delegates have been chosen by the state councils and certified by the officers of the associations concerned.

At the Philadelphia Session in 1931, the following resolution, submitted by Dr. Albert Soiland, California, was adopted:

Resolved, That it is the sense of the House of Delegates of the American Medical Association that those provisions of the Constitution and By-Laws of the American Medical Association dealing with the credentials of constituent state associations shall be so construed by the Reference Committee on Credentials that, when a constituent state association reports that one of its delegates and his respective alternate are both unable to attend a specified annual session of the American Medical Association in which one of them could have functioned as a delegate, under such conditions (provided the constituted body or council of such a constituent state association is authorized by its state constitution and by-laws to act for the state association and its house of delegates), when such authorized state body has duly elected others of its members to fill the vacancies caused by the absence of both a delegate and his respective alternate, such a duly elected substitute delegate or his duly elected substitute alternate who presents proper credentials shall be eligible to regular membership in the House of Delegates of the American Medical Association for such a specified annual session.

It would seem to be one of the purposes of this resolution to interpret the By-Laws of the American Medical Association with respect to the election and registration of delegates. While this resolution was adopted, no action was taken by the House

of Delegates to give to it the effect of a Standing Rule. In order that the Secretary may be in position to advise the officers of constituent associations properly with respect to the election and registration of delegates, and for the guidance of the Committee on Credentials, it is desirable that the House of Delegates shall decide whether changes in the By-Laws are needed or whether the resolution adopted at Philadelphia, and above referred to, shall be given the effect of a Standing Rule of the House. In this connection it would also seem advisable for the House of Delegates to decide whether the adoption of similar resolutions in the future shall give such resolutions the status of Standing Rules.

The Secretary desires to acknowledge his grateful appreciation of the many kindnesses and courtesies extended to him by practically everybody with whom he has had official contacts, and he is especially grateful to the secretaries and other officers of constituent associations and component societies and to the officers of the Association and members of the House of Delegates.

Respectfully submitted. OLIN WEST, Secretary.

REPORT OF THE BOARD OF TRUSTEES

To the Members of the House of Delegates of the American Medical Association:

The marked expansion in the work of the various departments of the Association which has been noted in the several reports of the Board of Trustees submitted year after year continued without abatement during the year 1931. In addition to increased activities in those departments which have been in operation for a number of years, several new activities were undertaken during the period covered by this report. The Bureau of Medical Economics was organized and has entered on an active program of investigation and compilation of data concerning many important subjects with which the medical profession is vitally concerned. The Committee on Foods has made progress in the perfection of its plans and has greatly increased the scope of its work. The Committee on Legislative Activities has been earnest in dealing with matters that have been assigned to it for official action. The work of the Library staff has been largely increased in necessary arrangements for taking over in its entirety the preparation of material for the QUARTERLY CUMULATIVE INDEX MEDICUS. The Bureau of Exhibits has been established on a permanent basis; in this bureau have been centralized certain activities formerly carried on through various departments and some initiated within the last year. Because of the continued expansion referred to and the inadequacy of the building now occupied by the Association's offices, it has become necessary to utilize the Assembly Room, which has heretofore been available for official meetings, for the purposes of the Library. It has been possible to make but few reductions in the working personnel but, in the case of some departments, it has been necessary to provide larger personnel in order that the service which seems to be expected of the Association may be adequately rendered.

Income and Expenditures

The income of the Association for 1931, as shown in the Auditor's Report, presented as a part of this report, naturally reflected the economic conditions arising from the financial depression which was so marked during the entire year. The increase in operating expenses over those reported for the year 1930 reflects the continued expansion of the Association's work. There was a slight decrease in Fellowship dues and subscriptions paid in 1931, as compared with 1930, amounting to $3,603.86. Advertising income for 1931 was less by $23,234.01 than in the preceding year. The gross income for 1931 was less than in 1930 by a sum slightly in excess of $47,000. Total operating expenses were larger in 1931 than in 1930 by $27,190.89, while there was an increase of $119,322.49 in Association and miscellaneous expenses, largely accounted for by depreciation in the values of real estate, building and physical equipment due to the marked depreciation in such values occasioned by economic conditions.

Buildings and Equipment

In accordance with established policy, the buildings owned by the Association have been maintained in the best possible condition, as has the physical equipment. The ninety-six page press put into operation last year has thoroughly justified its purchase by making larger production available at comparatively lower costs.

Because of unsettled conditions with respect to the plans of the city government, it has not yet been possible for the Board of Trustees to acquire one piece of property that will be necessary before building plans can be perfected. Even had this property been available, it would probably not have been wise to proceed with the erection of a new building for the reason that the investment securities held by the Association have depreciated in value in a manner common to all such securities. It is gratifying indeed that the Board of Trustees is able to report that the depreciation in the value of the Association's securities has apparently been smaller than similar depreciation reported by various corporations with large holdings.

The Journal

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION serves many functions. It is the official publication, providing all the official announcements and records of proceedings of the Association. It is a scientific periodical, which through original contributions and editorials keeps its readers abreast of progress in medicine. It is critical in its estimates of books, economic policies and legislation. It is a medical newspaper. It is a service publication, providing abstracts of articles in other periodicals and supplying answers to questions prepared not only by Association bureaus and departments but also by a consulting staff of authorities. Medicolegal decisions of important courts are regularly recorded. Foreign correspondents in the Far East, in South Africa, and in all the important centers of Europe and South America keep readers of THE JOURNAL informed concerning scientific and medicosocial changes and advancements in their countries. Special issues of THE JOURNAL cover regularly the conditions of hospitals, medical colleges, licensing boards and clinical and radiologic laboratories in this country. During 1931, THE JOURNAL provided more than 4,300 pages of reading matter. At an average of 1,000 words a page, this material is the equivalent of fourteen average books or half the size of the Encyclopedia Britannica.

THE JOURNAL is generally accorded world-wide recognition of leadership in its field, by both medical and lay critics. The policies and scope of the publication, which began to take systematic form about 1905, have been steadily carried forward.

The total number of copies of THE JOURNAL printed in 1931 was 4,912,439, with a gross weekly average of 94,470 copies. The mailing list on Jan. 1, 1932, carried 90,717 names, a decrease of 2,380 as compared with the number carried on Jan. 1, 1931. During the year, 14,678 names were added to the mailing list and 17,058 were removed because of discontinuances on account of death, ineligibility for Fellowship, resignation, expiration of subscription, and nonpayment of subscription and Fellowship dues. The loss in circulation of THE JOURNAL is attributable to conditions arising from the general economic depression. A number of subscribers who canceled their subscriptions because of financial conditions have since renewed them. The approximate count of Fellows and subscribers on THE JOURNAL mailing list by states is shown in an appended table in which the gain or loss of subscribers in each state is also indicated.

In another table will be found the number of physicians, based on the Twelfth Edition of the American Medical Directory, in the United States, the number receiving THE JOURNAL, and the approximate percentage in each state to whom THE JOURNAL goes.

In accordance with established policy, Fellows who have access to THE JOURNAL through subscriptions by associated members of groups and institutions have been permitted to substitute a special journal or the QUARTERLY CUMULATIVE INDEX MEDICUS therefor in connection with Fellowship. The number of such substitutions in 1931 was 4,212.

Special Journals

The special publications of the Association include periodicals devoted to the advancement of internal medicine, diseases of children, dermatology and syphilology, neurology and psychiatry, otolaryngology, pathology, surgery and ophthalmology. All are

recognized as worth while representatives of the fields they are planned to cover.

During 1931, several special supplements were issued with the financial support of various cooperating agencies, including the Josiah Macy, Jr., Foundation, which provided $1,000 for a supplement to the AMERICAN JOURNAL OF DISEASES OF CHILDREN. In several instances, research institutes and individual physicians have aided the publication of single contributions by bearing portions of the cost of excess illustrations and tabular matter.

TABLE 1.—*Approximate Count of Fellows and Subscribers on The Journal Mailing List, Jan. 1, 1932; Also Gain or Loss During 1931*

State	Fellows	Subscribers	Totals	Gain for Year	Loss for Year
Alabama	486	218	704	..	63
Arizona	204	106	310	..	12
Arkansas	376	148	524	..	56
California	3,564	2,120	5,684	..	126
Colorado	672	273	945	..	50
Connecticut	916	522	1,438	17	...
Delaware	107	41	148	..	5
District of Columbia	532	526	1,058	81	...
Florida	519	265	784	..	56
Georgia	654	304	958	..	47
Idaho	110	75	185	..	10
Illinois	4,960	2,395	7,355	..	300
Indiana	1,552	614	2,166	..	80
Iowa	1,372	417	1,789	..	65
Kansas	822	307	1,129	..	27
Kentucky	690	308	998	..	29
Louisiana	657	239	896	..	74
Maine	383	118	501	1	...
Maryland	828	430	1,258	4	...
Massachusetts	2,833	1,372	4,205	..	53
Michigan	2,252	946	3,198	..	189
Minnesota	1,428	541	1,969	..	93
Mississippi	298	113	411	..	58
Missouri	1,901	792	2,693	..	101
Montana	181	98	279	..	27
Nebraska	718	352	1,070	..	36
Nevada	59	26	85	..	1
New Hampshire	255	68	323	11	...
New Jersey	1,897	1,243	3,140	91	...
New Mexico	147	61	208	..	8
New York	8,601	4,646	13,247	14	...
North Carolina	704	330	1,034	9	...
North Dakota	240	103	343	6	...
Ohio	3,188	1,433	4,621	..	108
Oklahoma	701	216	917	..	81
Oregon	477	235	712	..	34
Pennsylvania	5,414	2,089	7,503	88	...
Rhode Island	344	158	502	10	...
South Carolina	334	146	480	..	29
South Dakota	220	120	340	..	...
Tennessee	671	352	1,023	..	70
Texas	1,771	677	2,448	..	141
Utah	196	70	266	..	24
Vermont	189	85	274	..	5
Virginia	866	425	1,291	..	26
Washington	804	300	1,104	..	37
West Virginia	599	215	814	..	37
Wisconsin	1,349	629	1,978	..	57
Wyoming	96	42	138	..	8
U. S. Army	...	172	172	5	...
U. S. Navy	...	250	250	..	25
Alaska	13	16	29	4	...
Canada	20	646	666	..	102
Cuba	6	63	69	..	16
Hawaii	83	68	151	..	3
Mexico	14	103	117	..	26
Panama	20	27	47	..	...
Philippine Islands	48	165	213	..	123
Porto Rico	67	37	104	..	2
Virgin Islands	2	3	5	..	1
Foreign	127	2,418	2,545	..	223

The circulation of these publications was well maintained; in spite of the financial situation there was a reduction of only 225 in the total circulation of these journals as compared with the previous year. Gains in circulation were recorded for three of this group of publications. The AMERICAN JOURNAL OF DISEASES OF CHILDREN, the ARCHIVES OF SURGERY, the ARCHIVES OF OTOLARYNGOLOGY and the ARCHIVES OF OPHTHALMOLOGY produced incomes larger than expenditures, while others of the special journals were published at a loss. For the whole group, the excess of expenditures over income amounted to $21,397.27.

Quarterly Cumulative Index Medicus

The QUARTERLY CUMULATIVE INDEX MEDICUS was published during 1931 with the continued cooperation of the Army Medical Library and the Carnegie Institution. The support of the Carnegie Institution was discontinued at the end of 1931, so that with the beginning of 1932 the cost of publication of this periodical, including its production, printing and circulation, is entirely in the hands of the headquarters office of the Association. This work is carried on as a part of the Library service. The discontinuance of the cooperation with the Army Medical Library makes necessary subscription by the headquarters office to an additional five hundred medical periodicals, which now become available for lending to Fellows and to subscribers, and for abstracting by THE JOURNAL and by the special publications of the Association. The total number of journals now regularly received is approximately 1,200, which does not include bulletins of health departments, of county medical societies, or similar periodicals, but only regularly published periodicals containing original contributions to medical literature.

The number of copies of the QUARTERLY CUMULATIVE INDEX MEDICUS distributed in 1931 was 2,182, as compared with 2,200 in 1930. The loss incurred through the publication of the INDEX was $29,533.49, which is slightly less than the loss incurred in the preceding year.

Library

With the end of 1931, it became necessary to expand the library by taking over the space formerly occupied by the Assembly Room. The Employees' Circulating Library has been placed in the N. S. Davis Memorial Room, and the room formerly occupied by the Employees' Circulating Library is now occupied by an extension of the package library service.

TABLE 2.—*Physicians Receiving The Journal* *

State	Number Receiving Journal	Physicians in State 12th A. M. A. Directory	Approximate Percentage Receiving Journal
Alabama	704	2,207	32
Arizona	310	494	63
Arkansas	524	1,977	26
California	5,684	10,109	56
Colorado	945	1,898	50
Connecticut	1,438	2,165	66
Delaware	148	278	53
District of Columbia	1,058	1,827	58
Florida	784	1,762	44
Georgia	958	2,888	33
Idaho	185	383	48
Illinois	7,355	11,382	65
Indiana	2,166	4,073	53
Iowa	1,789	3,125	57
Kansas	1,129	2,168	52
Kentucky	998	2,868	35
Louisiana	896	2,076	43
Maine	501	989	51
Maryland	1,258	2,480	50
Massachusetts	4,205	6,595	64
Michigan	3,198	5,589	57
Minnesota	1,969	3,075	64
Mississippi	411	1,567	26
Missouri	2,693	5,640	48
Montana	279	484	58
Nebraska	1,070	1,785	60
Nevada	85	131	65
New Hampshire	323	567	57
New Jersey	3,140	4,357	72
New Mexico	208	374	56
New York	13,247	21,008	64
North Carolina	1,034	2,372	44
North Dakota	343	515	67
Ohio	4,621	8,653	53
Oklahoma	917	2,484	37
Oregon	712	1,275	56
Pennsylvania	7,503	12,051	62
Rhode Island	502	844	60
South Carolina	480	1,292	37
South Dakota	340	585	58
Tennessee	1,023	2,962	35
Texas	2,448	6,475	38
Utah	266	489	55
Vermont	274	499	55
Virginia	1,291	2,584	50
Washington	1,104	1,920	58
West Virginia	814	1,782	46
Wisconsin	1,978	3,104	64
Wyoming	138	234	59

* This table gives the number of physicians (based on the Twelfth Edition of the American Medical Directory) in the United States, the number receiving the Journal, and the approximate percentage in each state. Copies to physicians in the United States Army and United States navy are not included.

The reasons for this expansion lie in the taking over of the complete production of the QUARTERLY CUMULATIVE INDEX MEDICUS, already referred to, and in the development of the other services rendered by the library department. In order to provide space on the shelves for 500 periodicals, many more stacks were needed.

Moreover, 7,901 copies of periodicals were lent to physicians and subscribers during 1931, which represents more than 1,500 additional requests over the previous year. Incidentally, the number sent in 1930 was the largest ever lent in the history of the Association up to that time. The receipt of additional periodicals to be indexed in the QUARTERLY CUMULATIVE INDEX MEDICUS is likely to increase this service much more during 1932, since 1,200 periodicals will now be available for lending instead of 750 previously subscribed for.

The package library service furnished 2,450 package libraries to physicians throughout the country during 1931. The number for 1930 was 2,067. Hence the increase was roughly 20 per cent. This service enables the physician in the most outlying communities who participates in the work of the Association to have readily available the literary documents and communications on any subject in which he may be interested. Since each package library contains from ten to thirty reprints and periodicals, such an increase in the service represents a much greater demand on the personnel. Great care is exercised in the selection of material for these library packages.

The library regularly replies to inquirers concerning reference questions; approximately 3,000 such questions were answered in 1931.

The circulating library maintained for the employees of the Association issued approximately 26 books daily and had a total circulation of 6,847 for the year.

The library now occupies practically all available space on the fifth floor of the Association headquarters. This expansion further demonstrates quite certainly the necessity for additional space if adequate service is to be rendered.

Hygeia

During 1931, HYGEIA, the Health Magazine, continued to hold a leading position as the one authoritative health periodical published in the United States for the public. It has provided adequate information on many topics; it has presented the point of view of scientific medicine in the field of economics; it has aided in the education of the child, and it has maintained cooperation between physicians, parents and teachers. Notwithstanding the period of depression, the circulation has been well maintained. The beginning of 1932 finds the development of new circulation and renewed interest among physicians. The publication of the series of articles on "The Medical Aspects of Lincoln" and on "Biologic Methods in the Study of Crime" has aroused wide public attention. The periodical is in every sense of the word a professional production and bears careful comparison with any other periodicals appearing on public news stands.

In spite of many discouraging conditions that existed throughout the year, the income received from subscriptions and through the sale of advertising space was sufficient to pay operating costs and to produce a net income of modest amount.

American Medical Directory

The total number of copies of the Twelfth Edition of the American Medical Directory sold up to Jan. 1, 1932, was 7,992. The total income received through the operations of the department in charge of the publication of the Directory was larger by the sum of $3,724.53 than the operating costs.

Cooperative Medical Advertising Bureau

A new member of the group participating in the activities of the Cooperative Medical Advertising Bureau is the *Journal of the Medical Association of the State of Alabama and of the State Board of Health,* which was established during the year 1931. Thirty-one state journals were represented in the Bureau, and this number has recently been increased by the affiliation of the *Medical Annals of the District of Columbia.*

The net earnings of the Cooperative Medical Advertising Bureau were $30,845.57, approximately $1,000 more than in 1930. Of the total amount earned by the Bureau, the sum of $14,250 was paid to the state journals concerned, having been distributed in amounts proportionate to the total amount of advertising business secured for each of the journals represented in the Bureau. This sum represents the amount of income earned by the Bureau over and above operating costs, and was paid in addition to the regular monthly remittance to state journals of payments for advertising space received from advertisers. The earnings of the Bureau are derived from commissions on the total amount of business secured through its activities.

Council on Pharmacy and Chemistry

For more than a quarter of a century the Council on Pharmacy and Chemistry has applied itself to the task set by its founder, Dr. George H. Simmons, of informing the medical profession in regard to the drugs, particularly those of a proprietary character, which they prescribe. During this time the Council has sought to encourage and help the conscientious, honest and far seeing manufacturer; it has impressed on the manufacturers who did not sufficiently have the interest of the medical profession at heart the futility of such a policy, and it has spread its reports and recommendations before physicians, so that they might better appraise the proprietary propaganda brought to their attention. In the performance of this task, the members of the Council have worked unceasingly and without remuneration. The Council's work has been a notable success, in part because of this unceasing work and in part because of the support it has received from the practicing physician and the publicity given the Council's reports by THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and by the many state and independent journals that have assisted in the effort.

In no small degree the work of the Council has received added moral support through the recognition of its value implied by the creation of the Council on Physical Therapy of the American Medical Association, the establishment of the Council on Dental Therapeutics by the American Dental Association, and more recently the appointment, at the recommendation of the Council, of the Committee on Foods. The Committee on Foods was instituted by the Board of Trustees as a subordinate committee of the Council and later, again on recommendation of the Council, as an independent committee of the American Medical Association. While each of these bodies has its own tasks, each one is doing its work in such a way that it supplements and strengthens that of the Council. In the case of the Committee on Foods, the Trustees, in acting favorably on the recommendation that this be made an independent body, made provision that, in the acceptance by the Committee on Foods of products also used in the treatment of disease, names must meet the requirements of the rules of the Council and that in the matter of scope the Committee defer to the Council.

INTRAVENOUS THERAPY

For many years the Council has cautioned the medical profession against needless intravenous medication. The discovery that certain drugs when administered in the conventional way by mouth were less effective or even inert because they suffered deterioration or destruction in their passage through the gastrointestinal tract was seized on by some commercial concerns to exploit for intravenous use drugs that could equally well or better be administered by mouth or by subcutaneous injection. These firms not only played up the spectacular side of the method with suggestions of how such therapy would impress the patient, but some even went so far as to hint at increased fees that would result. Many physicians were impressed and misled by the propaganda; soon concerns that were devoted to the promotion of this form of medication flourished, and many pharmaceutic firms added a line of "intravenous" preparations to their lists, including solutions of many drugs that are rationally administered by mouth. To offset this propaganda the Council has published warnings against needless intravenous therapy and has rejected preparations recommended for use intravenously when such administration was deemed undesirable or unsafe. Through a special committee of its therapeutic research committee the Council has issued a series of reports in which the rationale of intravenous therapy was discussed. During the past two years the method has received another impetus because of enthusiastic reports of favorable results from the use of barbital compounds when administered intravenously as a means of producing anesthesia or as a supplementary anesthetic. Many such published reports bore the earmarks of inspiration by those interested in the commercial exploitation of the drugs concerned, and most of them showed the emotional optimism so frequently associated with any new drug or procedure. The Council recognizes that the intravenous use of barbital com-

pounds may occasionally be justified by the need for rapid action in an emergency such as the control of convulsions of toxic or disease origin, or in certain operations; but it holds that for routine cases the oral or rectal administration is safer and to be preferred.

THE WORK OF THE COUNCIL

Briefly, the work of the Council is the task of advising the medical profession as to which among the new medicinal products offered by the manufacturers of pharmaceuticals are worthy of their trial and attention. This involves, of course, making reports on products that are found to be not acceptable. A product is accepted if there is adequate evidence in favor of its therapeutic usefulness and if it otherwise conforms to the principles which experience has shown are necessary for governing admission to New and Nonofficial Remedies, the annual volume in which are described the products which the Council has found acceptable. The rules or principles governing acceptance are published in that book for the guidance and information of both the physician and the manufacturer.

Once a product is accepted, it remains in New and Nonofficial Remedies until its value becomes so generally recognized that it is made official by inclusion in the U. S. Pharmacopeia. If, however, the product does not fulfil its promise of therapeutic usefulness, it is omitted from the book. The acceptance of any product expires at the close of three years, at which time it is reexamined and its acceptance continued if it is satisfactory or discontinued if it is found not to measure up to the standards by which it was originally judged. With the exception of the continuance of acceptance, all the Council's actions, whether of acceptance, rejection or omission, are published in THE JOURNAL and later in New and Nonofficial Remedies or in the annual reprint of the Reports of the Council on Pharmacy and Chemistry. This gives full publicity for all of the Council's decisions to manufacturers and physicians alike.

NEW AND NONOFFICIAL REMEDIES

In accordance with the usual custom of the Council, New and Nonofficial Remedies has been carefully scrutinized and revised to bring it abreast with the current of the best medical thought. The general articles have been brought up to date, and the descriptions of individual drugs have been revised wherever necessary. The book is thus a valuable reference text for students as well as for the practicing physician who wishes to keep informed on the latest authentic advances in drug therapy. An index to the reports of the Council on unacceptable products is included in the book, adding materially to its value as a reference text. The 1932 edition is now in the press.

THE ANNUAL REPRINT OF COUNCIL REPORTS

The annual reprint of the Reports of the Council on Pharmacy and Chemistry, now in the press, contains the collected reports of the action of the Council on all products that have been found unacceptable or have been omitted from New and Nonofficial Remedies during the past year. It contains also the special reports authorized by the Council during the year and preliminary reports on articles that show promise but are not yet ready for admission to New and Nonofficial Remedies or are not suitable for general use by the medical profession.

PRELIMINARY AND SPECIAL REPORTS

Occasionally there is brought to the attention of the Council a new product still in the experimental stage, which shows promise of usefulness but on which the experimental work has not been sufficient to make it ready to be offered for general use by the medical profession. In order to assure proper and controlled clinical study of such a product, the Council issues a preliminary report on its identity and standards, on the experimental work that has been done, and on the further study that may appear desirable. The forthcoming volume of Council reports will contain such articles on Nucleotide K 96, a preparation of pentose nucleotides which has shown promise in the treatment of leukopenia; and Carbarsone, which is *p*-carbaminophenyl arsonic acid and which needs further confirmatory evidence for its value in the treatment of amebiasis for which it is proposed.

The Council from time to time sponsors special reports, which are contributions to the advancement of knowledge by clearing up points concerning drugs and drug therapy. Two such reports are included in the forthcoming volume, on the intravenous use of barbital compounds and on the average optimum dosage of cod liver oil.

OTHER COUNCIL PUBLICATIONS

Other publications of the Council are Useful Drugs, which is designed to meet the demand for a less extensive materia medica and to supply a brief discussion of the actions, uses and dosage of a selected list of drugs, and the Epitome of the U. S. Pharmacopeia and National Formulary, which presents an abstract of all the material in those two books of standards and gives besides a brief statement of the actions, uses and dosage with an estimate of the therapeutic usefulness of each drug. At the 1930 annual conference of the Council on Medical Education and Hospitals, consideration of the prescribing of drugs was given a prominent place. As a result of this conference it was decided that the Council on Medical Education and Hospitals with the assistance of the Council on Pharmacy and Chemistry should issue a handbook for interns which, in addition to other subjects concerning the intern's duties and responsibilities, should contain a chapter on the use of drugs, the latter to be provided by the Council on Pharmacy and Chemistry. The manuscript of this text has been prepared and is at present in the press. The Council publishes annually a volume of reprints of the papers published during the year by those who receive grants from the Therapeutic Research Committee. The current volume is now in the press.

MEMBERS AND CONSULTANTS OF THE COUNCIL

Selected for their thoroughgoing knowledge of pharmacy, chemistry, pharmacology, physiology and clinical medicine, the members of the Council, most of whom are busy heads of hospitals, medical schools or university departments, give their services without remuneration, taking time from their overcrowded days to work for the cause of rational and scientific medicine. The hearty thanks and appreciation of the medical profession are due to the Council as a whole and to the members as individuals for the work that has been done and is being carried on.

The Council has felt free as occasion from time to time has arisen to obtain the advice and assistance of men trained in special fields. The response to such requests has always been gratifyingly prompt and full, thus furnishing another example of the unselfishness and devotion of scientists and clinicians to a worthy cause. In the past year the Council has received valuable advice and assistance from Drs. Edgar Allen, Asa S. Bacon, O. W. Barlow, Robert F. Chenowith, John W. Churchman, Robert A. Cooke, George W. Corner, Arthur H. Curtis, John Staige Davis, A. U. Desjardins, Géza de Takáts, Harry Gold, Evarts A. Graham, H. E. Hasseltine, P. J. Hanzlik, N. S. Heaney, Robert H. Herbst, Alfred F. Hess, Arthur D. Holmes, Dudley Jackson, Harold O. Jones, Leo Loeb, B. C. MacLean, R. D. McClure, Henry K. Mohler, Emil Novak, O. T. Osborne, Edwards A. Park, E. L. Sevringhaus, David H. Shelling, Donald C. Smelzer, Winford H. Smith, Franklin A. Stevens, Jr., W. W. Swingle, W. F. von Oettingen, Frederick A. Washburn and Russell M. Wilder, Messrs. W. E. Anderson and Charles A. Wordell, and Roberta W. Ball, R.N.

THE THERAPEUTIC RESEARCH COMMITTEE

Supported by an annual appropriation from the Board of Trustees, the Therapeutic Research Committee has for its object the attraction of workers to a relatively large number of investigations in therapeutic problems by giving aid and encouragement to such work wherever it seems needed. The aim has been to make relatively small grants for the purchase of materials, animals and the like to as large a number of workers as possible; but in every case the grant has been large enough to be of real assistance as supplemental to other resources of the investigators.

During the year 1932 the committee has distributed $3,250 among fifteen new grants. A detailed list of these grants, together with a list of publications during 1931 and of unexpired grants issued before Jan. 1, 1931, will be found in the appendix to this report.

The Chemical Laboratory

The Chemical Laboratory completed its twenty-fifth year of service in 1931. The Laboratory has made an enviable record for thoroughness and accuracy in its work and has contributed in a truly remarkable way to the promotion of the aims of the

Council on Pharmacy and Chemistry and of other departments of the Association. The personnel of the Laboratory includes four splendidly qualified chemists and necessary assistants.

WORK FOR THE COUNCIL ON PHARMACY AND CHEMISTRY

The major part of the work of the Chemical Laboratory is concerned with the investigation of products under consideration by the Council on Pharmacy and Chemistry. During the year, the number of new products giving promise of therapeutic merit that were submitted was far in excess of expectations, with the result that the facilities of the Laboratory have been heavily taxed. The Laboratory has examined and has carefully elaborated standards for a number of new products, including compounds of bismuth, calcium, sodium, new barbital products, iodized oil and others that are being generally proposed for therapeutic use. The study of dextrose and dextrose mixtures and of ephedrine in its dosage forms has been continued, and the greater part of the time of one member of the Laboratory staff has been given to the examination of hypnotics.

In several instances the Laboratory has clearly demonstrated that claims made for products submitted to the Council have not been justified, and errors have been shown with respect to the claims of chemical composition as well as those made concerning the therapeutic action.

WORK FOR BUREAU OF INVESTIGATION

The Laboratory has continued its cooperation with the Bureau of Investigation and has reported on a number of products for which claims of therapeutic efficiency have been made but which have been shown to be without merit.

INDEPENDENT INVESTIGATIONS

During the year, members of the Laboratory staff have published scientific articles in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and in other leading publications. The director and other members of the staff have delivered addresses before a number of scientific organizations and have also discussed popular topics at a number of public meetings and before the student bodies of several universities and schools.

Committee on Foods

The Committee on Foods has made remarkable progress. During the year, 331 products were submitted. In the submissions, manufacturers submit samples of the products, statements of analysis by impartial laboratories, statements indicating that the products have met all government regulations, and complete sets of advertising. As there is no government control of advertising claims, the Committee supplements the work of the government agency in verifying advertising claims and in eliminating those that are questionable. Of the 331 products submitted, final action has been taken on 274. Of these, 178 have been accepted, following statement by the manufacturer of his willingness to meet the rules of the Committee and complete revision of advertising to agree with the Committee's requirements. Thus, 96 products are still held in abeyance awaiting final action by the manufacturer in connection with modifications of advertising claims and in submission of new packages.

During the year, 129 announcements of acceptance have been made. The total number of products submitted to the Committee since its organization is 792 and of these 295 have been accepted. Hardly a single product was submitted that did not require modifications in advertising claims or changes in labels to make the product acceptable. Nevertheless, the vast majority of manufacturers have indicated their willingness to make necessary modifications to meet the requirements of the Committee.

It should be apparent that the work has had great constructive value and that the good to the public as a result of the work of the Committee is exceedingly great. Moreover, the cooperation of the Committee has made it possible to bring about a decided change for the better in the quality of material offered for advertising purposes.

Aside from this brief statement concerning action taken by the Committee on individual products, the Committee has done important work leading to the preparation of the book "Accepted Foods," which will be published during 1932. General decisions have been adopted concerning chocolate and cocoa products, the declaration of added salt or sugar in vegetables or fruits intended for infant or invalid feeding, statements of vitamin content and vitamin claims in food advertising, the use of "health" as a claim for a food product, and special decisions concerning fruit juices, sulphur dioxide in infant foods, and the value of gelatin.

During the year numerous requests have been received from individual physicians for information on certain food products in which they were interested. Such requests are invariably answered from the material available to the Committee on Foods.

The Committee has cooperated with the Council on Pharmacy and Chemistry in the preparation of a series of articles defining the present status of our knowledge of vitamins. These articles also will appear under the joint auspices of the Council and the Committee during 1932.

It should be emphasized that the work of this committee has been primarily constructive. It is functioning and operating in a positive manner to bring about truthful and correct advertising in the food field. Its work is educational. Its opinions and decisions are giving proper direction to constructive research in the food industry. It is cooperating in many ways for better nutrition of our people generally. The Committee aided the work of the President's Committee on Unemployment in the preparation of statements on proper nutrition, which have had wide circulation.

In several instances, food manufacturers have themselves declared their desire to avoid any program not in accord with the policies of the Committee. Already the office of the Committee on Foods is serving as a clearing house to the food industry, to physicians, to dietitians, and to the public generally. The Committee has done much to bring the American Medical Association closer to the everyday life of the people. It is making the public aware of the fact that the medical profession is acting in the interest of the public in all matters affecting nutrition and health.

The use of the official seal is permitted to the manufacturers of products that are acceptable for inclusion in the official lists of the Committee. It is not required that such products shall be advertised in the publications of the Association. Moreover, undue exploitation of the seal is not permitted.

These policies of the Committee have been generally recognized by leaders in the field of nutrition, in the food industries, in advertising, and by the public press. With the gradual establishment of a simple routine of conduct of its work, the Committee looks forward to increased prestige and service for the coming year.

Council on Physical Therapy

The Council on Physical Therapy was created primarily to protect the medical profession and public against misleading and deceptive advertising of devices manufactured and sold for physical therapy, to aid in placing physical therapy on a more substantial and reliable basis, and to disseminate trustworthy information concerning the uses of the methods developed in this field of therapeutics.

During the past year, noticeable advancement has been made in the regulation and control of advertising claims for physical therapy devices. Research and investigation have evolved new standards on which to base therapeutic claims, but there still is much room for improvement.

EDUCATIONAL ACTIVITIES

Instructive articles, prepared by Council members and specialists appointed by the Council, have been published in THE JOURNAL, and apparently have been favorably received as authoritative statements. Nine papers on such subjects as hydrotherapy, massage, posture and ultraviolet therapy have appeared in THE JOURNAL. A list of the articles published this year follows:

Therapy with Long Wavelength X-Rays (Grenz Rays), by Francis Carter Wood, M.D., and G. M. MacKee, M.D.

Devices Alleged to Cure Baldness by Means of Ultraviolet and Infra-Red Rays, by W. W. Coblentz, Ph.D.

Education in Physical Therapy.

Magnetic Belts: Report of Council on Physical Therapy on the "Vitrona" and "Theronoid."

The Use of Massage in Internal Medicine, by Ralph Pemberton, M.D.

Body Mechanics and Posture, by Robert Bayley Osgood, M.D.

Underwater Gymnastics, by C. L. Lowman, M.D.

Sources of Radiation and Their Physical Characteristics: Cold Red Ray and Cold Ultraviolet Ray Lamps, by W. W. Coblentz, Ph.D.

The Present Status of Light Therapy, by Dr. Edgar Mayer.

Through correspondence, more than twice as large in 1931 as in the year before, the use of moving pictures approved by the Council, exhibits of material prepared by the Council, and through addresses delivered before medical societies and other groups, the educational work of the Council is being developed.

Scientific work undertaken with support provided through monetary grants has been reported through the publication of "The Rate of Healing of Electrosurgical Wounds as Expressed by Tensile Strength," by Dr. John D. Ellis, and "The Refinement in Surgery of Tonsils—Including Electrosurgery," by Dr. Frederick B. Balmer.

ACCEPTED AND REJECTED DEVICES

In the seven years' existence of the Council, the art of physical therapy has undergone vast changes. The Council has investigated and studied laws of physical agents, such as electricity, radiation, magnetism, radioactivity and high frequency currents, the therapeutic effects of which were relatively unknown to the profession. The Council's work is usually on the border line of knowledge; therefore, time is required to prove conclusively the therapeutic benefit of these physical agents. In too many instances, claims made for therapeutic machines are not in keeping with the known scientific facts. In the past year the Council has investigated and published acceptances of two carbon arc lamps, two meters for x-ray dosage, and an artificial respirator machine. The exercising machine controversy has been satisfactorily handled and a rejection has been published, and a colonic therapy apparatus has been found unacceptable.

Many more devices for physical therapy have been investigated in the course of the year, but the Council has withheld action and awaited the results of experience and usage to determine the practicability and usefulness of the devices offered for examination. This has been especially true of diathermy and anesthetic machines and of oxygen therapy apparatus. Some of the devices are of such a nature that the assistance of other councils has been required in the investigation. The Council has maintained cordial relations with the Council on Pharmacy and Chemistry, the Bureau of Investigation, the Council on Dental Therapeutics of the American Dental Association, and other groups engaged in similar activities.

REGULATIONS GOVERNING THE ADVERTISING OF ULTRAVIOLET LIGHT MACHINES

An important action of the Council during the year was the adoption of regulations for the control of the therapeutic claims for light therapy. The Council has definitely set forth the merits and limitations, advantages and disadvantages of ultraviolet radiation therapy in the report entitled "Regulations to Govern Advertising of Ultraviolet Generators to the Medical Profession Only," which specifically mentioned the few diseases in which scientific evidence has shown the therapeutic effectiveness of ultraviolet radiations. In the report entitled "Regulations to Govern Advertising of Ultraviolet Generators to the Public Only," the Council has set forth the merits and limitations of sun lamps.

CONSULTANTS

From time to time the Council has had the help and advice of qualified consultants selected for their wide knowledge in such special fields as hydrotherapy, massage, ultraviolet radiation, anesthesia, resuscitation, and gas therapy. During the year the Council has received valuable advice and assistance from Dr. Walter M. Boothby, Dr. F. H. Ewerhardt, Dr. Samuel Feinberg, Dr. Alfred Hess, Dr. H. O. Jones, Dr. Myrta M. Knowles, Dr. C. L. Lowman, Dr. E. P. Lyon, Dr. Edgar Mayer, Dr. Clarence A. Neymann, Dr. Josef B. Nylin, Dr. Harry C. Steenbock, and Dr. K. W. Stenstrom.

CHANGES IN COUNCIL MEMBERSHIP

Through the death of Dr. A. S. Warthin, professor of pathology at the University of Michigan Medical School, during the past year, the Council lost a valuable member. He was a charter member of the Council and gave it much of his time. A thorough investigator and a careful scientific writer, Dr. Warthin was an authority in his field. Dr. Howard T. Karsner, professor of pathology at Western Reserve University School of Medicine, Cleveland, was appointed to take his place. Dr. Frederick J. Gaenslen, professor of orthopedic surgery at the University of Wisconsin Medical School, was appointed successor to Dr. Richard B. Dillehunt, who resigned last year.

Bureau of Health and Public Instruction

RADIO TALKS

One of the principal activities of the Bureau, which has increased decidedly in the last year, is the radio health program sent out over Station WBBM, consisting of five and fifteen minute health talks. These have ranged in frequency from two to as many as ten a week. During the year, 205 five minute talks and 120 fifteen minute talks were given. A large number of these health talks have been mimeographed for distribution to county medical societies for broadcasting through local stations. Approximately 130 medical societies are doing broadcasting of health material in some degree.

Reference has been made in previous reports to the difficulty of determining the extent of the radio audience, but occasionally evidence comes to hand showing that there are a good many interested listeners. In November the Chicago health department requested the use of the time which had been assigned to the American Medical Association for two weeks for the purpose of promoting a campaign for diphtheria prevention. Dr. Tonney, of the health department, gave a five minute talk one afternoon in a period assigned to the American Medical Association. No announcement had been made in THE JOURNAL or in the public press of any change of program, so that the audience reached was listening for a message from the Association. In the course of his talk, Dr. Tonney asked those who desired to have their children inoculated against diphtheria, or who wished to be inoculated themselves, to consult their family physician or to telephone or write to the Chicago health department. Within an hour, the health department in the city hall had received ninety-four telephone calls.

The radio affords a valuable method of disseminating authoritative, useful health information to the public.

CORRESPONDENCE—FIELD WORK

More than 5,700 inquiries received were replied to during the year. Replies were made to 2,750 inquiries submitted to *Hygeia*, of which approximately 10 per cent were printed in the magazine.

The director and the associate director of the Bureau have participated when possible in the programs of both professional and lay groups from which invitations have been received.

The material of the Bureau has been made available for exhibit purposes for use by county and state medical societies and other bodies but was not used as extensively in 1931 as in some previous years.

PAMPHLETS AND POSTERS

The following items have been added to the list of health education pamphlets issued by the Bureau, having been reprinted from HYGEIA:

The High Cost of Personal Neglect.
The Safest Place in Town.
Pure Water — Best of All Drinks.
Safeguarding Health at a Boys' Camp.
The Treasure of Healthy Harbor (Health Play).
The Ethics of Animal Experimentation.
At What Age Should Sex Education Begin?
Your Child's Eyes, Ears, Nose, Mouth.
The Community Swimming Pool.
The Dog's Gift to the Relief of Human Suffering.
Your Child's Mental Health.
Shoes and Healthy Feet.
Tonsils and Adenoids.
Epilepsy.
Tuberculosis in the Teen Ages.
Cold Facts About Colds.
The Common Minor Pelvic Ailments of Women.

The total number of pamphlets sold during the year is as follows:

Cancer pamphlets	2,862
Vision pamphlets	2,505
Research pamphlets	8,938
Sex education pamphlets	11,760
Score cards, anthropometric tables and record sheets	12,732
Baby welfare pamphlets	6,510
Baby welfare posters	302
Health education pamphlets	765
Public health pamphlets	17,277
Health examination blank	62,100
Health examination manual	900
What's A Health Examination, Anyway?	847
Communicable disease pamphlets	3,572
Health education program	589
Total number of units	131,559

This shows a slight increase over the number of items sold in 1930.

Copies of pamphlets and leaflets issued by the Bureau, in loose-leaf binders, have been sent to the libraries of fifty-one medical schools. As new pamphlets and reprints are published, it is proposed to send copies to the librarians of these several schools so that the loose-leaf volumes can be kept up to date.

PROTECTION OF MEDICAL RESEARCH

At the suggestion of Dr. E. C. Cutler, chairman of the standing Committee for the Protection of Medical Research, there was sent to each member of the senior classes of forty-eight class A medical schools (the other medical schools had already completed the annual session) one copy each of two articles from the A. M. A. series of publications on the protection of research; namely, "The Ethics of Animal Experimentation," by Dr. John Dewey, and "The Dog's Gift to the Relief of Human Suffering," by Dr. W. B. Cannon. It is proposed to repeat this action each year, so that every student of medicine will be informed of the nature and importance of the use of animals in experimental work previous to his entering into practice. They should be impressed with the serious menace of legislation hostile to this type of scientific investigation.

PERIODIC HEALTH EXAMINATIONS

Interest in the periodic examination of apparently healthy persons is increasing on the part of the profession, as shown by the inquiries which come to the Bureau, and also the demand for examination blanks, which continues about the same as that in previous years. A realization of the need and value of such examinations on the part of employers of labor is growing rapidly.

It is difficult to obtain accurate information as to the amount of activity in this field of periodic health examinations by private physicians in the regular course of medical practice. Information in regard to the matter was sought in the questionnaire mailed to the secretaries of about 2,000 medical societies last spring. The figures obtained refer to periodic physical examinations in private practice and also as to this service in connection with preschool and school children and 4-H Clubs. The questionnaires have not yet been completely summarized and analyzed, but of 1,042 reports in reference to activity in this line, 776 report that the members of their societies do engage in periodic health examinations of one type or another. It is evident, therefore, that the interest in this matter is steadily growing.

JOINT COMMITTEE ON HEALTH PROBLEMS IN EDUCATION

Cooperation with the National Education Association in the study and solution of health problems in the schools has been continued. Among the matters under consideration are:

1. The publication of a new set of ten colored posters.
2. The Outline of Suggestions for the Conduct of School Health Inspections.
3. A report on dental hygiene for school children, which has been in process of preparation by the American Dental Association for some months.
4. Supplementary reports suggested, to deal with health norms and defects of school children in reference to
   (*a*) Internal conditions.
   (*b*) Pediatrics.
   (*c*) Conditions of the skin.
   (*d*) Mental and Neurologic conditions.
   (*e*) Orthopedics.

It is planned to seek the aid and advice of some of the sections and committees of the American Medical Association in the preparation of these reports. There are proposed new topics for consideration during 1932 as follows:

1. Healthful Physical Education Activities for School Children.
2. Cooperation of Home and School for the Health of School Children.
3. Healthful Summer Activities for School Children.
4. Safety for School Children.
5. Revision of report "The Deafened School Child."
6. Consideration of a Project Relating to School Ventilation.

NATIONAL CONGRESS OF PARENTS AND TEACHERS

As authorized by the Board of Trustees of the American Medical Association, the Bureau furnished the Congress of Parents and Teachers with 200,000 copies of the blank used in their summer round-up campaign for the season of 1932. The congress has ordered, at its own expense, an additional 200,000 copies, making a total of 400,000 to be used this coming season.

The purposes and methods of procedure of the parent-teacher associations are, apparently, much better understood than in previous years and it is reported that the cooperation of the medical profession in this important activity has been very satisfactory. Through the summer round-up campaign, not only are thousands of children being relieved of physical defects by their family physicians, but millions of parents are being educated as to the value and importance of periodic examinations of apparently healthy children, as well as of adults at all periods of life.

CLUBS FOR BOYS AND GIRLS

Another nation-wide health movement of great importance and rapid development is the 4-H Clubs, having to do with the boys and girls living in the rural districts. One of the conspicuous features of this movement is the contests held in various communities and states, ending in a national contest in Chicago each autumn in connection with the Live Stock Exposition. It is gratifying to learn that physicians in the local and county medical societies are participating in these examinations of the 4-H Club boys and girls. One of the questions submitted in the questionnaire sent out last spring had to do with this matter. The reports have not been fully analyzed, but approximately 350 county secretaries report that their members have engaged in examinations of members of the 4-H Clubs and it is an important factor in promoting improvement in the health education of these farm boys and girls.

Bureau of Investigation

The correspondence, which makes up so large a part of the work of the Bureau of Investigation, was in 1931 approximately equal to that of 1930—in excess of 1,000 letters a month. Early in the year, the material on medico-economic subjects, which the Bureau of Investigation had handled up to that time, was turned over to the new Bureau of Medical Economics. There were 12,076 letters written by the Bureau of Investigation in 1931, as compared with 12,353 in 1930. The number of letters to physicians in 1931 exceeded that of 1930: 6,176 as compared with 5,866. The demand for data on individual physicians called for by state medical examining boards, as well as secretaries of county and state medical societies, has steadily increased.

The Bureau of Investigation has continued to cooperate closely with the Federal Trade Commission, the officials who enforce the national Food and Drugs Act, and also with the various Better Business Bureaus scattered throughout the country.

The director of the Bureau prepared for publication in THE JOURNAL, during 1930, over forty articles dealing with nostrum exploitation, quackery or pseudomedicine, some of them involving for their production a large amount of time-consuming and careful investigation. These dealt with 141 products, persons or concerns.

A number of addresses (mostly illustrated) on various phases of the nostrum evil and quackery and on cosmetics were given during 1931 by the director of the Bureau. Twelve of these were given in the Chicago area before such groups as the woman's auxiliaries, women's clubs, hospital nurses, parent-teacher associations, and medical and premedical students. Similar talks given outside the Chicago area were:

Janesville, Wis.: Combined meeting of the Rock County Bar Association and Medical Society.
Detroit: Members of the Wayne County Medical Society.
Green Bay, Wis.: (1) Members of the Rotary Club, (2) members of the Brown-Kewaunee County Medical Society, and (3) public meeting.
St. Charles, Mo.: (1) The Eighth Councillor District meeting, and (2) Students of Lindenwood College.
Maryville, Mo.: (1) Before the "Round Table," and (2) public meeting under the auspices of the Nodaway County Medical Society in the Northwest Missouri State Teachers College.
St. Joseph, Mo.: (1) Radio talk, (2) talk before the members of the Buchanan County Medical Society, and (3) public meeting under the auspices of the Woman's Auxiliary and the Buchanan County Medical Society.
Manhattan, Kan.: (1) Before the Kansas State Medical Society, and (2) public meeting under the auspices of the state society.
Cleveland: Northern Ohio Dental Association.
Elkhart Lake, Wis.: Fifth District of the State Medical Society of Wisconsin.
Colorado Springs, Colo.: Public meeting under the auspices of the Colorado State Medical Society.

The demand for pamphlets, posters and the book "Nostrums and Quackery," issued by the Bureau of Investigation, still continues, and the sale of posters in 1931 increased more than 70 per

cent over that of 1930. Work on the third volume of "Nostrums and Quackery" proceeds slowly because of the steady pressure of routine work of the Bureau.

Bureau of Legal Medicine and Legislation

FEDERAL LEGISLATION

A summary of legislation of interest to physicians enacted in the third session of the Seventy-First Congress was published in the AMERICAN MEDICAL ASSOCIATION BULLETIN, November, 1931. This covered the period up to March 4, 1931, when the third session adjourned. The Seventy-Second Congress convened, Dec. 7, 1931, and up to the close of the year no legislation of interest had been enacted.

Federal Subsidies for Control of State Health Activities.—Efforts made by proponents of Sheppard-Towner legislation were unsuccessful in the Seventy-First Congress. Those efforts were renewed, however, at the beginning of the Seventy-Second Congress by the introduction of two bills, S. 572 by Senator Jones of Washington and H. R. 4739 by Representative Bankhead of Alabama. Senator Robinson of Arkansas and Representative Barton of Missouri introduced bills to authorize an appropriation of $3,000,000 for special studies and demonstration work in rural sanitation. Senator Hatfield of West Virginia introduced a bill authorizing federal subsidies to enable the federal government to supervise the care, treatment and rehabilitation of crippled persons under 21 years of age. All the bills referred to were in committee at the close of the year.

Medicinal Liquor.—Four medicinal liquor bills were pending in Congress at the close of the year. Three of these would remove the restrictions imposed on physicians with respect to the prescribing of liquor and the fourth would permit physicians to prescribe malt liquors for medicinal purposes. The Bureau of Legal Medicine and Legislation, under instructions from the House of Delegates and in cooperation with the Committee on the Control of the Medicinal Use of Liquor, prepared a bill for introduction in the Seventy-Second Congress proposing to remove the statutory restrictions on the quantity of liquor a physician may prescribe or administer to any one patient within a stated period. The bill was framed not only to enable physicians to employ alcohol and alcoholic liquor medicinally in such doses as are therapeutically indicated but also to protect professional secrecy by providing that no physician shall be reqiured to file any statement, in any office of the government, of any ailment from which his patient is suffering, or to keep his records in such a way as to lead to the disclosure of such ailments, except that he may be required to disclose such information in court or in the course of hearings held under the National Prohibition Act or to disclose it to duly qualified persons engaged in the execution and enforcement of the act.

World War Veterans' Relief Legislation.—The Seventy-First Congress made available approximately $37,000,000 to provide additional hospital beds and other accommodations for veterans. At the close of the year, a bill was pending in the Seventy-Second Congress proposing to authorize the appropriation of $20,877,000 for additional hospital and domiciliary facilities for veterans of all wars. That this expenditure of the people's money to build, equip and maintain additional hospitals to care for veterans is unnecessary was shown in a survey conducted by the Council on Medical Education and Hospitals in January, 1931, wherein it was stated that there were 114,510 unoccupied beds in 3,902 hospitals in the United States, Dec. 1, 1930.

The report of the Director of the Veterans' Bureau for the year ended June 30, 1931, shows that 52 per cent of the World War Veterans under treatment in veterans' hospitals at the close of the year were there on account of diseases and conditions not connected with the service. Of all patients admitted during the year, 76 per cent were admitted for diseases and injuries not traceable to war service. The number of patients under treatment for such diseases and injuries has been rapidly increasing. One year after the passage of the legislation authorizing the admission of patients suffering from non-service disabilities, they formed 14 per cent of the hospital load; in 1931 they formed 54 per cent.

The American Medical Association failed in its efforts to procure the abandonment of the government's policy to extend hospital and medical care to veterans suffering with non-service connected diseases and injuries in federal hospitals. The House of Delegates at the Philadelphia session adopted a resolution looking toward a plan whereby veterans who are totally disabled by sickness or injury of any kind, whether of service or non-service origin, could obtain medical and hospital care in their own home communities, from physicians and hospitals of their own choice. The director of the bureau cooperated with the Auxiliary Committee on Veterans' Legislation at conferences and by correspondence with a view to bringing this plan to the attention of members of Congress at any hearings that may be held on bills for the extension of hospital facilities to veterans.

Animal Experimentation.—A bill was introduced by Senator Frazier of North Dakota to prohibit experiments on living dogs in the District of Columbia. The bill was still pending in the Seventy-Second Congress at the close of the year. Opposition to such legislation has always been declared by the American Medical Association because it is felt that while any bill that Congress might enact with respect to this matter would apply only to the District of Columbia and other places under the exclusive jurisdiction of the federal government, its enactment would tend to stimulate the passing of similar laws in the several states and thus retard scientific research.

A representative of this bureau was assigned to duty in Washington while Congress was in session and the director appeared at a number of hearings before congressional committees and had many conferences with members of Congress and with administrative officers of the government.

STATE LEGISLATION

Since Jan. 1, 1931, the legislatures of forty-four states convened in regular sessions. Twelve of these met in one or more special sessions also. Approximately 3,000 bills of medical interest were introduced but, according to the records of the bureau, only 134 were enacted. The bills introduced included those relating to cults, requiring annual registration of physicians, levying occupational taxes on practitioners of medicine, requiring the reporting of suspicious wounds, regulating the sale or possession of drugs and medicinal chemicals, regulating the establishment and maintenance of hospitals, amending workmen's compensation acts, providing for asexual sterilization, preventing the use of living dogs for scientific research, and granting physicians and hospitals treating persons injured in accidents liens on money obtained by judgments, settlements or compromises based on those injuries. Notice of the introduction and change in status of all bills of medical interest was given each week by the bureau through the news columns of THE JOURNAL. For details concerning state legislation in the sessions held during the past year, reference should be made to the October and November, 1931, issues of the AMERICAN MEDICAL ASSOCIATION BULLETIN.

MISCELLANEOUS

Abstracts of cases of medicolegal interest decided by all courts of last resort in this country have been prepared by the bureau for publication in THE JOURNAL each week.

The Bureau has cooperated to the fullest possible extent with the officers and committees of state associations in all matters coming within the scope of its work.

Bureau of Medical Economics

PURPOSE, FUNCTIONS AND METHOD OF PROCEDURE

Immediately following the establishment of the Bureau in March, 1931, the director formulated an outline of the purpose, functions and methods of procedure of the Bureau and the phases of medical economics in which work should be initiated as soon as possible, to serve as a guide for both study and administration.

The Bureau of Medical Economics is established to study all phases of general economics that have a bearing on the practice of medicine. In every consideration of medical economics it must be remembered that: "A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession." Although business methods and economic principles are essential to an orderly conduct of the financial phase of the practice of medicine, all such methods and principles must serve rather than dominate the profession, must be secondary to the primary object of the profession, and must conform to the accepted principles of medical ethics.

The principles of medical economics, as they become established, should serve the profession as a sound guide in business and economics; they should never be perverted to defend even the borderline actions of the near charlatan.

The functions of the Bureau of Medical Economics are: (1) to collect, tabulate, study, criticize and prepare for publication and distribution data pertaining to the economics of the practice of medicine; (2) to furnish critical and constructive information and opinions by correspondence on the several phases of medical economics; (3) to encourage the adoption by individual physicians and medical societies of modern, sound, ethical business methods; (4) to urge medical schools to provide medical students with information concerning the economics of medical practice, and an outline of essential business principles which should be incorporated early in individual practice; (5) to develop, ultimately, a consultation service with respect to medical business methods.

The Bureau will endeavor to collect data on the following phases of economics:

Capital investment in medicine.
Care of the indigent sick.
Collection methods and agencies.
Contract practice.
Costs of medical education — students' expenditures — complete cost.
County and state dues.
Dispensaries and clinics.
Distribution of physicians.
Distribution of medical facilities.
Evaluation of patient's ability to pay.
General insurance for physicians.
General investments.
Group practice.
Health and accident insurance.
Industrial medicine.
Instruction in medical economics (college and extension courses).
Malpractice insurance.
Medical fees.
Office plans.
Office systems.
Panel systems (of foreign countries).
Physician's income.
Sickness financing.
Sickness insurance (compulsory and voluntary).
Sickness savings.
Sickness statistics.
State, county and municipal health department activities.
Thrift programs.
Workmen's compensation.

and such other phases of medical economics as may from time to time properly come within the scope of the Bureau's activities,

Opinions on specific, individual or local professional economic problems should be guarded or tentative until a general principle shall have been established to govern in the consideration of each special phase of medical economics. In all phases of the general subject in which the experience of large nonmedical groups has led to the adoption of definite economic policies, due consideration will be given such findings and policies when seeking to establish economic principles for guidance of the medical profession.

Every question pertaining to medical economics will be considered impartially and without personal bias. Courtesy and fairness, with nonmedical groups that touch some phase of medical economics, must mark every step of progress.

Policies and principles established after careful deliberation, supported by factual evidence and, wherever possible, by parallel procedures in the business, industrial or commercial fields will thenceforth govern in similar questions and situations.

When considering the economics of medical care, one must make a clear distinction between commercial and economic interests. Commercialism is characterized by: (1) unreasonable fees; (2) alleviation always predicated on cash in hand or no service; (3) unethical tendencies or practices; (4) destruction of scientific motive in both the individual and the profession at large; (5) transformation of the profession into a trade or business; (6) destruction of confidence in the profession; (7) an insidious tendency toward state medicine. Economics as applied to medical practice is predicated on sound ethical principles, constructive and reasonable: (1) Alleviation of suffering, prevention of disease, pursuance of research and the dissemination of dependable information are recognized as the primary obligations of the profession; (2) there should be a just compensation for service rendered; (3) modern ethical business methods are necessary to provide the highest type of service at the most reasonable cost; (4) ethical business methods insure confidence in the profession; (5) correct economic measures insure adequate amount and quality of service to indigent as well as pay patients; (6) the use of ethical business methods and correct economic measures serve to promote in the profession higher scientific attainments because of greater freedom from financial anxiety.

Detailed methods of providing the most economic medical service to both indigent and pay patients must differ according to local requirements, but the principles and policies governing the application of these methods must be universally applicable.

In many phases of medical economics, physicians must act as an organized group in order to accomplish the most worthy ends. Individual action along these lines will not be as effective or as free from error as collective organized action.

Whenever legislation limits or obstructs the most effective economic and high grade medical service, efforts must be made by organized medicine, after thorough study of the subject, to remove such limitations or obstructions.

New methods of providing medical care should be adopted only after a careful and thorough study of present medical facilities and the requirements for additional facilities. Duplication of effort and overhead expense is a principle diametrically opposed to correct economic methods.

SAVINGS FOR SICKNESS

In compliance with the resolution presented at the Detroit session on the subject of savings for sickness, inquiry was made of the American Bankers Association to determine whether that association is now promoting or contemplates any plans to encourage the public to open savings accounts by which individual sickness costs may be met. The American Bankers Association replied that "The Savings Bank Division, American Bankers Association, has for years sponsored the setting up of a reserve by individuals in savings banks against illness."

MEDICAL CARE OF THE INDIGENT SICK

On April 21 and 22, 1931, an inquiry was sent to all secretaries of state medical societies to determine the extent to which county medical societies, as units or groups, are now caring for the indigent sick. Replies were received from forty states. In Iowa, several county medical societies have adopted the plan of entering into contract with the county commissioner to render service to the sick poor. This plan provides for the participation of all the physicians of the county society, thereby offering the patient the privilege of choosing his own physician. Plans similar to that operating in Iowa were reported as follows: Arizona, 1 county; Colorado, 1 county; Idaho, 1 county; Illinois, 3 counties; Iowa, 15 counties; Kansas, 1 county; Wisconsin, 1 county, a total of 23 county medical societies administering medical services to the sick poor or as an organized medical unit.

During the past year, several court decisions have declared that corporations cannot practice medicine. These court decisions seem to have made it necessary to revise theories and practice relative to arrangements for the care of the sick poor.

HEALTH AND ACCIDENT CLAIM PROOFS

The Michigan State Medical Society during 1929 and 1930 examined the practice, in the insurance field, of demanding physicians to fill in blanks for proof of loss under health and accident contracts and adopted a resolution requesting the House of Delegates of the American Medical Association to concur in the action of that society in its efforts to establish a fee of not less than $2 for each preliminary and final claim proof. The resolution also asked that a committee be instructed to study the facts involved, formulate a national policy and report at the next annual meeting of the House of Delegates.

On Aug. 5, 1931, an inquiry was addressed to the commissioner of insurance of each state as follows:

The American Medical Association is compiling information concerning state regulations governing the filing of health and accident insurance claim proofs.

Answers to the following questions will be very helpful in the study now in progress. If more space is needed, please carry answers to the back of this page.

1. Do state statutes or regulations of the state insurance department require that the proof of health and accident insurance claims be based upon a physician's certificate?

2. If so, do these statutes or regulations state specifically the information that must be included in the claim proof? (State in full the questions which must be answered.)

3. Is there a precedent in your state, as a result of case law, whereby physicians have become liable as a result of divulging confidential information to insurance companies?
4. Can you furnish the exact citations?

The replies were negative to all questions, indicating that, although "due or affirmative proof" of loss is required, state statutes and insurance regulations do not prescribe the information the physician must furnish as proof.

The next inquiry was directed to 376 stock and mutual accident and health insurance companies, including legal reserve life insurance companies and fraternal societies in the form of a schedule, explained by letter as follows:

The Bureau of Medical Economics of the American Medical Association is assembling information on the subject of claim proof for losses under health and accident insurance contracts.

This study has been initiated because of the adoption recently, by a state medical society, of a resolution providing for the charging of a fee for making claim proofs. Before recommending any action to establish a nation wide policy on this matter, we desire to have all the facts pertaining to health and accident insurance contracts and the present practice for establishing "due proof" of claims.

We are therefore requesting all insurance companies writing health and accident insurance contracts to assist in the study by presenting material and comments bearing on the subject. We request that you send us a copy of each type of health and accident contract which your company sells; two copies of the application for health and accident insurance and two copies of each preliminary, supplementary and final proof report form used for each type of insurance.

We shall appreciate answers to the questions on the enclosed schedule and any comments which may both contribute to a more comprehensive understanding of the subject and lead to a mutual adjustment of disputed points. Should a conference seem advisable, will you be willing to send a representative to such a conference?

SCHEDULE ON MEDICAL ECONOMICS

Date.....193..

To: The Bureau of Medical Economics, American Medical Association, Chicago, Illinois.

.....Insurance Company, with headquarters at

Street..... City..... State.....

F. Health and Accident Insurance

1. Are all items on your health and accident insurance claim proof blanks essential to establish proof of loss?
2. If not, what questions do you consider indispensable for such proof? (Enumerate here.)
3. Would your company be willing to adopt a shorter form of claim proof blank?
4. Does your contract or claim proof blank contain a waiver clause to be signed by the insured to protect the physician in furnishing confidential information called for in the claim proof blank?
5. Does your company make provision for fees to physicians or hospitals in payment for filling out claim proof blanks?
6. If so, what are the limits in size of fees paid?
7. If not, is your company willing to consider adopting a fee for filling out proof blanks?
8. Does your company now pay physicians or hospitals for filling out claim proof blanks by an assignment orders from the insured?
9. Would your company be willing to adopt such a procedure?
10. What other suggestions do you care to make concerning means by which the physician's or the hospital's interest in the company's payment for claims may be safeguarded?

At the time of making this report, 105 companies had replied, only 86 of which returned schedule F, completed. The replies to the questions in schedule F are given in the accompanying table.

Replies to Questions in Schedule F

Question	Yes	No	Yes, Conditionally	Not Answered
1.....	73	12	0	1
3.....	46	32	5	3
4.....	12	71	1	2
5.....	0	85	0	1
7.....	7	73	5	1
8.....	12	72	1	1
9.....	20	48	9	9

Thus far, then, the replies indicate that most of the companies consider their claim proof forms satisfactory, but more than half of the eighty-six replying are willing to adopt a shorter form. Only twelve of the companies have incorporated a waiver clause on the contract or claim proof blank. Not one of those reporting makes provision for fees to physicians for filling out these blanks, but several pay for additional information that may be asked for by the company.

Only twelve companies honor claims of physicians or hospitals when represented as assignment orders by the insured, but twenty additional companies are willing to adopt such a procedure and nine are willing to consider this question conditionally.

A member of the International Claim Association was present at the committee meetings at which the Michigan resolution was discussed during the Philadelphia session of the American Medical Association and later discussed the subject at the annual meeting of the International Claim Association. At its last annual meeting, which closely followed the eighty-second annual session of the American Medical Association, the International Claim Association appointed a committee to study the practice of claim proofs and to work with the Bureau of Medical Economics in recommending a practice mutually satisfactory to the medical profession and to the insurance companies.

At a conference in New York with Mr. Robert K. Metcalf, manager of the claim department of the Connecticut General Life Insurance Company and chairman of the committee appointed by the International Claim Association, it was learned that a questionnaire had already gone to 233 insurance companies with membership in the International Claim Association, the Accident and Health Conference and the Bureau of Personal Accident and Health Underwriters. Replies were coming back promptly and the insurance companies were signifying a cordial willingness to help in any way to solve the problem.

The procedure which Mr. Metcalf outlined is as follows:

1. To assemble claim proof blanks from all companies willing to participate in the study.
2. To list all separate questions asked on claim proof blanks.
3. To devise a claim proof blank which will call for only the absolutely essential information to establish proof of loss.
4. To seek universal adoption of such a form as a standard uniform blank to be used by all companies (such a procedure has a precedent in the adoption, some years ago, of a standard uniform death proof blank by life insurance companies).
5. To confer with the Bureau of Medical Economics on the method of authorizing physicians to give confidential information on claim proof blanks, the manner in which the physician's and the hospital's interests in the amount due the insured may be safeguarded, and the nature of information required of physicians for which payment will be made by the companies. Other questions may arise during the study over which conference will be necessary.

This, therefore, is only a report of progress, since it will require several months to complete the work; but the study has been initiated with a very cordial relationship existing between the insurance companies' representatives and the American Medical Association. There is reason to believe that some significant values to both the insurance companies and the profession will result from the mutual effort.

CAPITAL INVESTMENT AND MAINTENANCE

Schedules to the number of 2,673 were returned with data relative to capital investment in medicine and maintenance of medical practice. After those schedules which were incomplete or otherwise not suitable for study had been removed, it was found that the remaining number was insufficient from which to draw accurate and dependable conclusions on this subject. A report of this study, therefore, will not be published.

INCOME FROM MEDICAL PRACTICE

A report on income from medical practice based on data received from 6,328 physicians was published in THE JOURNAL, May 16, 1931. At this time correlations between gross and net incomes were included for general practice only.

In THE JOURNAL, Jan. 9, 1932, a supplementary report on physicians' income, giving the correlation between gross and net incomes of specialists, was published.

SCHEDULES TO STATE AND COUNTY MEDICAL SOCIETIES

Since it is not practical to visit all county medical societies throughout the United States to observe the methods used in medical economics, schedules have been sent to county medical society secretaries, on the approval of the state secretaries, to secure at least some basic information as to county medical society activities on medical economics. Schedules were sent on the subjects of dispensaries and clinics, collection methods and agencies, contract practice, group practice, industrial medicine, medical fees, health insurance, and savings for sickness. It is contemplated that it may require some investigation on the part of county medical societies before some of the schedules can be answered. Therefore, the returns are now incomplete and the tabulations have been deferred until they can be representative of a larger part of the United States.

COLLECTION METHODS AND AGENCIES

Letters requesting information concerning collection methods and rates were sent to nearly 3,100 collection agencies. The tabulation of these returns and comment on collection methods will constitute a separate report.

FIELD WORK

Field work has taken the director into Ohio, Indiana, Michigan, Illinois, Iowa, Missouri, Kansas, Minnesota, North Dakota, Montana, Washington, Oregon, California, Utah, Colorado and Nebraska. During these visits to state and county medical societies, medical groups, individual physicians, state and local health departments, hospitals, clinics, hospital associations, contract groups, industrial plants and lay individuals, those phases of medical economics which were manifest in the several communities were observed and studied.

The field work in the states mentioned involved individual or group conferences with some 1,400 physicians in 29 cities. The chief item of economic interest during these conferences was contract practice, although other types of medical organization and service were investigated, such as care of the indigent sick, clinics and dispensaries, group practice, activities of state and municipal health departments, industrial medicine, and workmen's compensation.

CONTRACT PRACTICE

In addition to the information obtained by means of field observations and studies, schedules which have been previously mentioned in this report brought in from state and county medical societies additional information pertaining to contract practice and other phases of medical economics. Thus far, the information which has been secured by means of both field work and mail schedules indicates that the types of industry or groups using contract practice or flat rate medical service is fairly widespread.

The accompanying list, which is by no means complete, is given to indicate the extent to which business and industry is involved in using contract practice of some type for medical, surgical and hospital care.

TYPES OF INDUSTRY OR GROUPS USING CONTRACT PRACTICE OR FLAT-RATE MEDICAL SERVICE

Arizona—Mining, railroads, water companies.
Arkansas—Mining, fraternal orders, railroads.
California—All types of manufacturing, railroads, oil production, canneries, municipal police and water departments.
Colorado—Mining, sugar refining, railroads, fraternal orders.
Connecticut—Fraternal orders, foreign societies, railroads.
Georgia—Cotton mills, farm communities, railroads.
Idaho—Lumbering, railroads.
Kansas—Factories, packing plants, cement plants, iron foundries, sacking mills, railroads, telephone companies.
Kentucky—Mining, insurance companies, manufacturing establishments, railroads.
Louisiana—Paper mills, lumbering, gas companies, foundries, railroads.
Minnesota—Lumbering, railroads.
Mississippi—Cotton and knitting mills.
Montana—Mining, hotel and transportation company.
Nebraska—Sugar refining.
North Carolina—Cotton and paper mills.
Oregon—Lumbering, logging, canning, shipping, railroads, postal employees.
South Carolina—Textile industry.
Texas—Banks, hotels, newspapers, department stores, oil producers, mining, railroads.
Utah—Mining, meat packing, sugar refining, railroads.
Vermont—Manufacturing.
Washington—Lumbering and wood working, department stores, garages, laundries, railroads, shipping, pulp mills.
West Virginia—Mining, lumbering, paper manufacture, smelters, glass factories, stamping mills.
Wisconsin—Manufacturing and retail concerns.

In THE JOURNAL, March 5, 1932, a special article on contract practice set forth the data thus far collected relative to this phase of medical economics. This article, which is too long to include here, has been reprinted from THE JOURNAL and is presented as a supplement to this report. Copies of the reprint are available to all delegates.

RESOLUTION CONCERNING THE NATIONAL BOARD OF MEDICAL EXAMINERS

No direct action was taken relative to the following resolution presented at the last annual session of the House of Delegates from the Section on Nervous and Mental Diseases, since it does not properly come within the scope of this Bureau.

WHEREAS, The National Board of Medical Examiners has indicated definite interest in establishing standards for the qualifications of neurologists and psychiatrists; and

WHEREAS, The National Board of Medical Examiners may arrange and conduct proper examinations of those who desire to practice neurology and psychiatry; and

WHEREAS, The National Board of Medical Examiners may confer certificates on those who meet the required standards; and

WHEREAS, There is need for such recognition by the group of men who are now completing fellowships in neurology and psychiatry; and

WHEREAS, Certificates by the National Board will receive both professional and lay recognition and aim to improve teaching in both the neurologic and the psychiatric fields: therefore be it

Resolved, That the Section on Nervous and Mental Diseases of the American Medical Association expresses its appreciation to the National Board of Medical Examiners and assures that board of its active cooperation and willingness to participate in this educational movement.

It is recommended that this resolution be referred for appropriate consideration to the Council on Medical Education and Hospitals.

OFFICE ROUTINE

Since the Bureau has been established, correspondence has reached 5,495 letters. Two articles have appeared in THE JOURNAL, "The Cost of Medical Education—Students' Expenditures" and "Income from Medical Practice."

BUREAU PLANS FOR THIS YEAR

During 1932, the Bureau will continue its studies as follows:

1. The study on health and accident claim proof practice will be completed. The results of this study will carry recommendations for a standard claim proof practice, including fees to be paid by insurance companies for information furnished by physicians. The details of the form which these recommendations will take cannot be anticipated now, but a report will be ready for the House of Delegates in 1933.

2. The study on contract practice will be continued and extended.

3. A report on collection methods and agencies will be prepared from the data now being studied.

4. A study will be initiated to determine to what extent, if any, state, county and municipal health department activities are encroaching on private medical practice.

5. A study, similar to paragraph 4, will be undertaken to determine to what extent, if any, the student health and medical services of public schools, colleges and universities are encroaching on private medical practice.

It is impossible, at present, to anticipate other studies or field work that may require attention as emergency measures.

Bureau of Exhibits

THE ANNUAL SCIENTIFIC EXHIBIT

The Scientific Exhibit at the Philadelphia session was not only the largest but also the most excellent exhibit of scientific material that has ever been conducted under the auspices of the American Medical Association.

The five medical schools in the city of Philadelphia contributed largely to the success of this exhibit in that these schools provided a wealth of material of unusually high quality. Nine sections of the Scientific Assembly sponsored seventy-seven exhibits, a considerably larger number than had ever been shown at any annual session under the sponsorship of the scientific sections. The section exhibits have constantly improved in quality and in educational value. The exhibits from institutions and groups and from individuals were more numerous at the Philadelphia session than at any previous session and were fully up to the highest standards of merit.

The sections that sponsored exhibits at Philadelphia were: Section on Dermatology and Syphilology, sixteen exhibits; Section on Diseases of Children, eight; Section on Laryngology, Otology and Rhinology, ten; Section on Nervous and Mental Diseases, nine; Section on Obstetrics, Gynecology and Abdominal Surgery, nine; Section on Ophthalmology, ten; Section on Preventive and Industrial Medicine and Public Health, six; Section on Radiology, five, and Section on Urology, seven exhibits.

The three special exhibits authorized by the Board of Trustees were on Fresh Pathology, on Fractures, and on Varicose Veins, and all of them attracted large numbers of visitors, who seemed to take an intense interest in the demonstrations. In

the Exhibit on Fresh Pathology the demonstrations were made by several of the leading pathologists of the United States. The Exhibit on Fractures, under the able guidance of the same committee that has had charge of this undertaking for five years, received widespread attention. Demonstrations were given by seventy-five physicians from all parts of the country, assisted by personnel from the United States Navy. The Exhibit on Varicose Veins, which was first shown at the Detroit session in 1930, was repeated at the Philadelphia session and commanded the interest of a great many visitors. The demonstrations were conducted by a group of highly qualified physicians who have devoted especial attention to the study of varicose veins. All of the demonstrators, who rendered such excellent service in connection with these exhibits, gave their services voluntarily, as did the members of the committees under whose direction the exhibits were prepared.

The Committee on Awards, composed of seven members, was confronted with an arduous task, and its duties were performed in a thoroughly satisfactory manner. The report of the committee received almost universal commendation and there was little criticism of the committee's decisions.

The annual Scientific Exhibit is under the specific direction of a special committee of the Board of Trustees. The duties of this committee have become more onerous with each succeeding annual session as the result of the constantly growing number of applications for space that are submitted as well as of the constantly improving quality of the material offered.

The Scientific Exhibit has come to be perhaps the most prominent feature of the Association's annual sessions. At the Philadelphia session there were at times as many as 5,000 persons in the Exhibit hall. It is probable that the peak was reached at Philadelphia with respect to the number of individual offerings and with respect to the amount of material exhibited. It is difficult to secure satisfactory facilities for an exhibit as large as that held at Philadelphia and any further increase in the size of the exhibit would probably involve prohibitive costs.

THE CENTRAL SCIENTIFIC EXHIBIT

Five additional exhibits were installed in the Central Scientific Exhibit during 1931. These are:

Rocky Mountain Spotted Fever: R. R. Spencer, Detroit session, 1930.
Tularemia: Edward Francis, Minneapolis session, 1928.
Experimental Transmission of Endemic Typhus Fever: Bedford Shelmire and W. C. Dove, Philadelphia session, 1931.
Experimental Leukemia: Jacob Furth, Philadelphia session, 1931.
Encephalography: Eugene P. Pendergrass and Temple Fay, Portland session, 1929.

The space available in the building of the Association will not permit any further additions to the Central Scientific Exhibit.

ASSOCIATION EXHIBITS

During the past year, the Bureau of Exhibits has received a large number of requests for material to be used at the meetings of professional and lay organizations. It was impossible to comply with many requests that were received because of the expense involved, the difficulty of securing satisfactory demonstrations, and other reasons. Twenty-seven major exhibits were sent during the year to the annual meetings of constituent state medical associations, hospital associations, educational organization and other groups. Ten exhibits of a scientific nature were sent to the meetings of state medical associations and other professional organizations. Seventeen exhibits of a popular nature were sent out by the Bureau, including those which were sent to state fairs in Illinois, Nebraska, Utah, California and Oregon. Other exhibits included those provided for the use of the Michigan State Medical Society at its annual meeting, the Illinois Congress of Parents and Teachers, the Illinois Women's Club, and the Annual Health Exposition at Evanston, Ill., as well as smaller exhibits sent to schools, civic clubs and other groups in and about Chicago.

The Bureau of Exhibits has been engaged in an effort to develop material of better quality and of more educational value than that which has heretofore been available.

MOTION PICTURES

During the year the Bureau of Exhibits has made a partial survey of the field of motion pictures and has prepared a list of available films on health and medical subjects for the use of the Committee on Motion Pictures.

The Canti Film on Cancer and the Harvey Film on the Circulation of the Blood have been lent to a number of medical societies and medical schools.

EXHIBIT AT CENTURY OF PROGRESS

The Bureau has been engaged with a special committee appointed by the Board of Trustees to prepare an exhibit for the Century of Progress, to be held in Chicago in 1933. Some progress has been made in developing material for this exhibit.

PUBLICATIONS

The "Primer on Fractures," prepared by the Special Committee on Fractures in connection with the five annual exhibits that have been made under the auspices of that committee, has gone through its third printing, and the demand for this valuable little volume is still strong. The pamphlet on "Varicose Veins," printed in connection with the exhibit on varicose veins, has gone through two printings, and all copies of the pamphlet prepared in 1931 have been distributed. The booklet on "Practical Suggestions Regarding Biochemical Diagnostic Methods," prepared in connection with the special exhibit in the Scientific Exhibit, is still available for those who wish to have it.

Report of the Committee on Scientific Research for 1931

During the year, fifty-four applications for grants were received. Thirty-two awards were made (grants 197 to 229), the total amount awarded being $13,600. Fifteen applications were declined, two were withdrawn and five are under active consideration. The new grants provide support for research in various fields of medical science. In all cases save two the

Financial Statement for 1931

Balance to credit of committee, Jan. 1, 1931	$ 1,984.12	
Appropriation for 1931	13,750.00	
Donation (Cornelius Van Zwalenburg Fund)	500.00	
Refund, grant 147	229.29	
Refund, grant 160	108.97	
Refund, grant 163	17.80	
Refund, grant 178	35.20	
Refund, grant 180	271.30	
Refund, grant 181	366.67	
Refund, grant 193	30.12	
Refund, grant 205	25.20	
Refund, grant 221	32.00	
		$17,350.67

Grants and Expenses Paid in 1931

Grant 197, J. J. Morton	$ 250.00	
Grant 198, Gilbert Dalldorf	200.00	
Grant 199, I. S. Kleiner	500.00	
Grant 200, C. A. Dragstedt	250.00	
Grant 201, J. H. Black	100.00	
Grant 202, James T. Case and C. A. Aldrich	250.00	
Grant 203, W. J. Merle Scott	300.00	
Grant 204, Alan M. Chesney	1,000.00	
Grant 205, Robert M. Oslund	150.00	
Grant 206, David Polowe	50.00	
Grant 207, Maurice L. Cohn	250.00	
Grant 208, I. S. Ravdin	600.00	
Grant 209, Wilbur A. Selle	150.00	
Grant 210, Harold E. Himwich	500.00	
Grant 211, Ward Giltner and I. Forest Huddleson	1,500.00	
Grant 212, Timothy Leary	250.00	
Grant 213, Harold G. Grayzel	500.00	
Grant 214, Harry J. Deuel, Jr	600.00	
Grant 215, Daniel A. McGinty	150.00	
Grant 216, W. R. Tweedy	750.00	
Grant 217, E. B. Hart and C. A. Elvehjem	600.00	
Grant 218, Clayton J. Lundy	1,000.00	
Grant 219, Norbert Enzer	100.00	
Grant 220, David Polowe	100.00	
Grant 221, Mary E. Maver	100.00	
Grant 222, G. E. Burget	500.00	
Grant 223, Géza de Takáts	600.00	
Grant 224, Owen H. Wangensteen	600.00	
Grant 225, R. S. Cunningham	500.00	
Grant 226, Warren C. Hunter	100.00	
Grant 227, Helen T. Parsons	300.00	
Grant 228, H. U. Williams	500.00	
Grant 229, Timothy Leary	300.00	
Clerical expenses	600.00	
Committee expense	412.92	
Printing	37.33	
		$14,650.25
Balance on hand		$ 2,700.42
Balance unpaid of grant 229		510.00
Unallocated balance		$ 2,190.42

money has been paid to the financial officer of the institution with which the grantee is connected, the grants being disbursed on requisitions by grantees. Reports of the progress of the work and of the disbursements are made twice each year and recent reports indicate that the work under all the pending grants from the committee is making satisfactory progress. The work under twenty-one grants prior to 1931 has been completed during the year and the final results have been published. The final results of work being done under nineteen grants are in the course of publication or of preparation for publication. In twelve grants made before 1931 active work is still in progress, but in several instances results of the work have been published. Refunds, amounting to $1,116.55, have been made from nine grants.

The committee again wishes to make appreciative acknowledgement of the donation of $500 by Dr. Cornelius Van Zwalenburg of Riverside, Calif., for the support of the investigation of certain problems in intestinal hydraulics (see grants 197 and 200, 1931).

The committee ventures to recommend that the same appropriation be made for 1932 as was made for 1931, namely, $12,550 for grants in aid of medical research and $1,200 for the expenses of the committee.

A list of the grants made in 1931 and brief accounts of grants pending at the end of 1930 are presented in the appendix.

Respectfully submitted.

COMMITTEE ON SCIENTIFIC RESEARCH OF
THE AMERICAN MEDICAL ASSOCIATION,

JOHN J. MORTON, Rochester, N. Y. Term expires, 1933.
N. W. JONES, Portland, Ore. Term expires, 1934.
MARTIN H. FISCHER, Cincinnati. Term expires, 1935.
LUDVIG HEKTOEN, Chicago, Chairman. Term expires, 1936.
C. C. BASS, New Orleans. Term expires, 1937.

Retirements and Appointments

Dr. N. P. Colwell, for more than twenty-five years Secretary of the Council on Medical Education and Hospitals, and Dr. J. M. Dodson, Director of the Bureau of Health and Public Instruction, have retired because of ill health.

Dr. W. D. Cutter was appointed to succeed Dr. Colwell as Secretary of the Council on Medical Education and Hospitals, and Dr. W. W. Bauer was made Director of the Bureau of Health and Public Instruction.

Dr. R. G. Leland was appointed to serve as Director of the newly created Bureau of Medical Economics.

Dr. T. G. Hull was appointed Director of the Bureau of Exhibits.

Special Committees

The Committee on Legislative Activities, composed of Dr. C. B. Wright, chairman, Dr. E. H. Cary, Dr. Thomas S. Cullen, Dr. D. Chester Brown and Dr. J. H. J. Upham, and its Auxiliary Committee have been very diligent in dealing with the duties assigned to them and have contributed an unusual amount of time and effort in the performance of these duties. The members of the Auxiliary Committee are Dr. E. A. Meyerding, Dr. F. S. Crockett, Dr. Otho A. Fiedler, Dr. Angus McLean, Dr. Holman Taylor and Dr. H. H. Shoulders.

Other special committees have also been earnest and efficient in carrying out the work that has been assigned for them to do.

The Association is extremely fortunate in that so many of its members and Fellows are willing to devote themselves to its service whenever called on and, in the name of the Association, the Board of Trustees tenders to the members of the various special committees appointed by the Board an expression of sincere thanks for the valuable services rendered.

Field Work

Official visits to the meetings of medical societies by officers and members of the administrative personnel of the Association were made in larger numbers during 1931 and the early part of 1932 than in any similar period in previous years. The President, the President-Elect, the Editor, members of the Board of Trustees and of councils, the Secretary of the Association and heads of various departments have appeared before influential groups in most of the states of the Union.

The Baker Suit

VERDICT FOR ASSOCIATION

The suit brought against the American Medical Association by Norman G. Baker of Muscatine, Iowa, came to trial in February, 1932. This suit was based on statements made in articles that appeared in THE JOURNAL and in HYGEIA concerning the activities of Norman G. Baker and the Baker Institute in connection with the treatment of cancer. The trial was long drawn out but resulted in a verdict for the Association.

The Board of Trustees desires to express its grateful appreciation of the services rendered in this suit by a number of physicians who served as witnesses for the Association. Drs. Joseph Colt Bloodgood, Albert C. Broders, Max Cutler, Burton T. Simpson and Francis Carter Wood rendered especially valuable service as expert witnesses or in assisting the Association's attorneys.

Working Personnel

While it has been possible to make small reductions in the number of employees in some departments, it has also been necessary to add to the personnel of one or two. The number of employees in 1931 remained practically the same as in the preceding year. There has not only been no diminution in the amount of work to be done but there has been an actual increase in the demands for service of various kinds, so that the volume of work has been larger than ever before. The employees of the Association have been diligent and efficient, and the Board of Trustees desires to commend the working personnel for their loyal service.

Respectfully submitted.

EDWARD B. HECKEL, Chairman.
J. H. WALSH, Secretary.
D. CHESTER BROWN.
ALLEN H. BUNCE.
THOMAS S. CULLEN.
A. R. MITCHELL.
JOSEPH A. PETTIT.
ROCK SLEYSTER.
J. H. J. UPHAM.

APPENDIX

GRANTS OF THERAPEUTIC RESEARCH COMMITTEE

The following is a list of the investigations conducted with the assistance of grants made by the Therapeutic Research Committee, reports of which were published during 1931:

1. Certain Aspects of Mouse Protection Tests for Antibody in Pneumococcus Pneumonia, Frederick T. Lord, M.D., and Elbert L. Persons, M.D.: *Journal of Experimental Medicine*, February, 1931.

2. Ovarian Hormone and Metabolism, J. F. McClendon, Lillas Myrick, Claire Conklin and I. H. Wilson: *American Journal of Physiology*, April, 1931.

3. Further Studies of the Effect of Insulin on the Amino-Acid Content of Blood, Albert Clare Daniels and James Murray Luck: *Journal of Biological Chemistry*, April, 1931.

4. The Preparation of Theelol. Edward A. Doisy and Sidney A. Thayer: *Journal of Biological Chemistry*, May, 1931.

5. The Bioassay of Theelol. Jack M. Curtis and Edward A. Doisy: *Journal of Biological Chemistry*, May, 1931.

6. Characterization of Theelol. Sidney A. Thayer, Louis Levin and Edward A. Doisy: *Journal of Biological Chemistry*, May 1, 1931.

7. Theelin. Some Physical and Chemical Properties. Sidney A. Thayer, Louis Levin and Edward A. Doisy: *Journal of Biological Chemistry*, May, 1931.

8. Experimental Nephritis in the Frog: II. Perfusion Methods of Testing the Kidney by Dissociation of Its Functions, Jean Oliver, M.D., and Eshref Shevky, Ph.D.: *Journal of Experimental Medicine*, June, 1931.

9. Experimental Nephritis in the Frog: III. The Extravital Production of Anatomical Lesions in the Kidney and Their Correlation with the Functional Aspects of Damage, Jean Oliver, M.D., and Pearl Smith, M.D.: *Journal of Experimental Medicine*, June 1, 1931.

10. Notes on the Relation of Iodine to Goiter, J. F. McClendon: *Endocrinology*, July-August, 1931.

11. The Pharmacological Action of the Principles Isolated from Ch'an Su, the Dried Venom of the Chinese Toad, K. K. Chen, H. Jensen and A. Ling Chen: *Journal of Pharmacology and Experimental Therapeutics*, September, 1931.

12. The Presence of Uneven Quantities of Bismuth in Oily Bulk Suspension of Bismuth Salts, H. N. Cole, Katharine I. Henderson, W. F. von Oettingen and Torald Sollmann: *Archives of Dermatology and Syphilology*, November, 1931.

During 1931 the following grants were made:

Grant 165: F. B. Flinn, associate professor of physiology, and Adelaide Ross Smith, associate professor in medicine, Columbia University, $250, to investigate the effect of viosterol on the elimination of lead after lead poisoning.

Grant 166: Jean Oliver, professor of pathology, Hoagland Laboratory, Long Island College Hospital, $200, to investigate experimental lesions in perfused mammalian heart.

Grant 167: W. F. von Oettingen, assistant professor of pharmacology, Western Reserve University School of Medicine, $200, to investigate the synthesis and pharmacology of choline derivatives.

Grant 168: N. E. Schreiber, research fellow, Department of Pharmacology, Morley Chemical Laboratory, Western Reserve University, $250, to investigate the excretion of mercury after oral administration.

Grant 169: C. W. Greene, professor of physiology and pharmacology, University of Missouri School of Medicine, $250, to investigate the pharmacology of camphor and camphor derivatives.

Grant 170: Moyer S. Fleisher, professor and director of Department of Bacteriology and Hygiene, St. Louis University School of Medicine, $250, to investigate serum sickness.

Grant 171: Ernest C. Dickson, professor of Department of Public Health and Preventive Hygiene, Stanford University School of Medicine, $250, to investigate therapeutic procedures against coccidioidal granuloma.

Grant 172: Frank P. Underhill, professor of Department of Pharmacology and Toxicology, Sterling Hall of Medicine, Yale University, $250, to investigate water and ion changes following burns.

Grant 173: W. F. von Oettingen, assistant professor of pharmacology, and E. E. Ecker, associate professor of immunology, Department of Pathology, Western Reserve University School of Medicine, $100, to investigate the experimental study of the effects of indium salts in the treatment of syphilis.

Grant 174: Treat B. Johnson, Sterling professor of chemistry, Yale University, $250, to investigate protein sugar fractions and their antigenic properties.

Grant 175: John R. Murlin, director and professor of physiology, Department of Vital Economics, University of Rochester School of Medicine, $200, to investigate the administration of insulin by mouth.

Grant 176: Fred E. D'Amour of the Department of Chemistry, University of Denver College of Liberal Arts, $100, to investigate estrin preparations.

Grant 177: J. F. McClendon, professor of physiologic chemistry, University of Minnesota Medical School, $250, to investigate the determination of iodine in urine.

Grant 178: O. W. Barlow, assistant professor of pharmacology, Western Reserve University, $200, to investigate the effects of morphine on fixed-dose anesthesia.

Grant 179: Leo Loeb, Edward Mallinckrodt professor of pathology, Washington University School of Medicine, $250, to investigate the effect of injections of various preparations of lactic acid on animal tumors.

GRANTS OF COMMITTEE ON SCIENTIFIC RESEARCH

NEW GRANTS

Grant 197: J. J. Morton, University of Rochester School of Medicine and Dentistry, $250 (Van Zwalenburg Fund) for a study of the causes of appendicitis.

Grant 198: Gilbert Dalldorf, Grasslands Hospital, Valhalla, N. Y., $200 for a study of the human uterus by casts and in other ways.

Grant 199: Israel S. Kleiner, New York Homeopathic Medical College and Flower Hospital, $500 for aid in attempts to crystallize rennin.

Grant 200: C. A. Dragstedt, Northwestern University Medical School, $250 (Van Zwalenburg Fund) for a study of experimental appendicitis and related problems.

Grant 201: J. H. Black, Baylor University College of Medicine, $100 for study of the relation of certain pollen fractions.

Grant 202: James T. Case and C. A. Aldrich, Evanston Hospital, Evanston, Ill., $250 for roentgenologic and clinical study of the thymus.

Grant 203: W. J. Merle Scott, University of Rochester School of Medicine and Dentistry, $300 toward a study of the rôle of the suprarenal cortex in pyogenic infections.

Grant 204: Alan M. Chesney, Johns Hopkins Hospital, $1,000 in aid of work on immunity in syphilis.

Grant 205: Robert M. Oslund, University of Illinois College of Medicine, $150 for a histologic study of the bones and teeth as influenced by the anterior lobe of the hypophysis (refund $25.20).

Grant 206: David Polowe, Paterson, N. J., and Sydenham Hospital, New York, $50 for determination of the specific gravity of the blood in the prenatal and postnatal states.

Grant 207: Maurice L. Cohn, National Jewish Hospital, Denver, $250 for work on the cultivation of the tubercle bacillus.

Grant 208: I. S. Ravdin, University of Pennsylvania School of Medicine, $600 for a study of the absorptive function of the gallbladder.

Grant 209: Wilbur A. Selle, University of Texas School of Medicine, $150 for a study of the carbohydrate metabolism in its relation to the growth of tumors.

Grant 210: Harold E. Himwich, Yale University School of Medicine, $500 for a study of fat metabolism in diabetes.

Grant 211: Ward Giltner and I. Forest Huddleson, Michigan State College, $1,500 for an investigation of Brucella infection in swine and in workers in packing plants.

Grant 212: Timothy Leary, Office of the Medical Examiner, Boston, $250 toward a study of the early lesions of rheumatic endocarditis.

Grant 213: Harold G. Grayzel, the Jewish Hospital of Brooklyn, $500 for a study of experimental amyloidosis.

Grant 214: Harry J. Deuel, Jr., University of Southern California School of Medicine, $600 for a study of glycogenesis in fasting animals.

Grant 215: Daniel A. McGinty, Emory University, Georgia, $150 for a study of the absorption of lactic acid, dextrose and oxygen by the heart muscle in continuation of work under grant 185, 1930.

Grant 216: W. R. Tweedy, Loyola University School of Medicine, Chicago, $750 for continuation of work under grants 143 and 146, 1928, on the parathyroid hormone.

Grant 217: E. B. Hart and C. A. Elvehjem, University of Wisconsin, $600 toward a study of phosphorus in rachitic and normal blood.

Grant 218: Clayton J. Lundy, Rush Medical College, Chicago, $1,000 toward making animated motion pictures of the actions of the heart in health and in disease.

Grant 219: Norbert Enzer, Mount Sinai Hospital, Milwaukee, $100 for an investigation of the gases produced by the combustion of x-ray films.

Grant 220: David Polowe, Paterson, N. J., and Memorial Hospital, New York, $100 for a study of the specific gravity of the blood in human cancer.

Grant 221: Mary E. Maver, National Institute of Health, Washington, $100 toward the expenses of publishing results of work on diphtheria toxin (refund $32).

Grant 222: G. E. Burget, University of Oregon Medical School, $500 toward further investigation of absorption from the closed intestinal loop in continuation of work under grants 149, 1926; 170, 1929, and 191, 1930.

Grant 223: Géza de Takáts, Northwestern University Medical School, $600 for aid in studying the effect of celiac ganglionectomy on sugar tolerance.

Grant 224: Owen H. Wangensteen, University of Minnesota, $600 in aid of a study of intestinal obstruction in continuation of work under grant 188, 1930.

Grant 225: R. S. Cunningham, Vanderbilt University, Nashville, Tenn., $500 toward a study of the cellular reaction in experimental syphilis with respect to the effects of treatment.

Grant 226: Warren C. Hunter, University of Oregon Medical School, $100 for a study of the effect of cinchophen on the liver of the dog.

Grant 227: Helen T. Parsons, University of Wisconsin, $300 for a continuation of an investigation of the physiologic effects of egg white in continuation of previous work under grants 175 and 195, 1930.

Grant 228: Herbert U. Williams, University of Buffalo, $500 toward the cost of illustrations for a review of precolumbian bone syphilis.

Grant 229: Timothy Leary, Office of the Medical Examiner, Boston, $810 toward a study of the effect of alcohol and insulin on the deposition of cholesterol in the animal body.

STATE OF WORK UNDER PREVIOUS GRANTS

1. COMPLETED DURING THE YEAR

"Completed" means that the work immediately aided by a grant has been concluded, that account has been made of the expenses, and that results of the work have been published.

Grant 94, 1926: $800 to R. L. Benson, University of Oregon School of Medicine, for experimental study of arteriosclerosis. Benson, R. L.; Smith, K. G., and Semenov, H.: Experimental Arteritis and Arteriosclerosis Associated with Streptococcal Inoculations, *Arch. Path.* **12:** 924, 1931.

Grant 106, 1927: $500 to A. M. Yudkin, Yale University, for work on experimental cataract and related changes. Yudkin, A. M.: The Formation of the Aqueous Humor, *Tr. Am. Acad. Opth. & Oto-Laryng.*, 1928: A Critical and Experimental Study, *Tr. Am. Ophth. Soc.* **26:** 319, 1928. Krause, A. C., and Yudkin, A. M.: The Chemical Composition of the Normal Aqueous Humor of the Dog, *J. Biol. Chem.* **88:** 471, 1930. Yudkin, A. M.; Kriss, M., and Smith, A. H.: Vitamin A Potency of Retinal Tissue, *Am. J. Physiol.* **97:** 611, 1931. Yudkin, A. M.: Presence of Vitamin A in the Retina, *Arch. Ophth.* **6:** 510, 1931.

Grant 115, 1927: $100 to J. E. Else, University of Oregon School of Medicine, for experimental work on the surgery of the esophagus. Else, J. E.: Carcinoma of the Esophagus, *Northwest Med.* **28:** 25, 1929.

Grant 140, 1928: $400 to Bernhard Steinberg, Toledo Hospital, for study of recovery from experimental peritonitis. Steinberg, Bernhard; and Goldblatt, Harry: Production of Active Immunity Against the Fatal Outcome of Experimental Fecal Peritonitis, *Arch. Int. Med.* **42:** 415, 1928. Steinberg, Bernhard; and Snyder, D. A.: Immune Cellular Reactions in Experimental Acute Peritonitis, *Arch. Path.* **8:** 419, 1929. Sternberg, Bernhard: The Cause of Death in Acute Diffuse Peritonitis, *Proc. Soc. Exper. Biol. & Med.* **28:** 59, 1930, and *Arch. Surg.* **23:** 145, 1931; A Rapid Method of Conferring Protection to the Peritoneum Against Experimental Peritonitis, *ibid.* **29:** 16, 1931; Effect of Hyperleukocytosis (Hyperleukocytic Preimmunity) in Infection, *ibid.*, p. 18.

Grant 143 and 146, 1928: $568.61 to W. R. Tweedy, Loyola University School of Medicine, Chicago, for work on purifying the parathyroid hormone. Tweedy, W. R., and Chandler, S. B.: Studies on the Blood Plasma Calcium of Normal and Parathyroidectomized Albino Rats, *Am. J. Physiol.* **88:** 754, 1929. Tweedy, W. R.: Studies on the Plasma Calcium-Raising Principle of Bovine Parathyroid Glands, *J. Biol. Chem.* **88:** 649, 1930. Tweedy, W. R., and Smullen, J. J.: Purification of Parathyroid Hormone, *J. Biol. Chem.* **92,** 1931. The work will be continued under grant 216, 1931.

Grant 147, 1928: $1,000 to A. V. Hardy, State Hygienic Laboratories, Iowa City, for work on the bacteriology of undulant fever (refund, $229.20). Hardy, A. V.; Hudson, M. G., and Jordan, C. F.: The Skin as a Portal of Entry in Brucella Melitensis Infections, *J. Infect. Dis.* **45:** 271, 1929. Hardy, A. V., and others: Undulant Fever with Special Reference to Study of Brucella Infection in Iowa, *Pub. Health Rep.* **45:** 2433, 1930. Hardy, A. V., and others: National Institute of Health Bulletin number 158, 1931.

Grant 148, 1928: $250 to J. J. Morton, University of Rochester School of Medicine and Dentistry, for work on intoxication in intestinal obstruction and strangulation (Van Zwalenburg Fund). Morton, J. J.: The Differences Between High and Low Intestinal Obstruction in the Dog: An Anatomic and Physiologic Explanation, *Arch. Surg.* **18:** 1119, 1929. Morton, J. J., and Sullivan, W. C.: A Comparison Between Simultaneous Equal-Sized Closed Obstructions of the Duodenum and the Ileum, *ibid.* **21:** 531, 1930.

Grant 153, 1929: $300 to G. A. Talbert, University of North Dakota, for the continuation of the study of the constituents common to the sweat, blood and urine, aided by previous grants (104 and 122, 1927, and 135, 1928) ($116.61 refunded). Talbert, G. A., and others: Simultaneous Study of the Constituents of the Sweat, Urine and Blood, also Gastric Acidity and Other Manifestations Resulting from Sweating: VIII. Blood Changes, *Am. J. Physiol.* **97:** 426, 1931.

Grant 159, 1929: $300 to R. L. Moodie, Santa Monica, Calif., to complete a study of otosclerosis and other causes of deafness among pre-columbian Peruvians under grant 127, 1328. Moodie, R. L.: Deafness in Precolumbian Peru, to be published from Wellcome Historical Medical Museum.

Grant 160, 1929: $500 to Helen Bourquin, University of Michigan, for work on diuretic substance of experimental diabetes insipidus and the study of its properties, in continuation of the work under grants 120, 1927, and 102, 1926 (refund, $108.97). Bourquin, Helen: Studies on Diabetes Insipidus: IV. *Am. J. Physiol.* **96:** 66, 1931.

Grant 164, 1929: $100 to J. H. Black, Baylor University College of Medicine, for the chemical study of ragweed pollen ($49.56 refunded). Black, J. H.: A Soluble Specific Carbohydrate of Ragweed Pollen, *J. Allergy* **2:** 161, 1931.

Grant 166, 1929: $500 to H. F. Thurston, Indianapolis, for the study of the toxemia of acute intestinal obstruction (refund, $119.65). Thurston, H. F.: The Rôle of Toxin of B. Welchii in the Toxemia of Acute Intestinal Obstruction, *Arch. Surg.* **22:** 72, 1931.

Grant 168, 1929: $500 to V. C. Jacobsen, Albany Medical College, for the study of the effects on animal tissues of alternating current of ultra high frequency. Jacobsen, V. C., and Hosoi, K.: The Morphologic Changes in Animal Tissues Due to Heating by an Ultrahigh Frequency Oscillator, *Arch. Path.* **11:** 744, 1931. Knudson, A., and Schaible, P. J.: The Effect of Exposure to an Ultrahigh Frequency Field on Growth and on Reproduction in the White Rat, *ibid.* **11:** 723, 1931.

Grant 169, 1929: $600 to H. J. Howard, Washington University School of Medicine, for aid in research in ophthalmic bacteriology. Weiss, C.: Studies on Bacterium Granulosis in Relation to Trachoma: Its Pathogenicity for Various Monkeys and Apes, *Tr. Am. Acad. Ophth. & Oto-Laryng.* **35:** 234, 1930.

Grant 170, 1929: $500 to G. E. Burget, University of Oregon School of Medicine, for continuation (grant 149, 1926) of a study of the effect of hydraulic pressure in closed intestinal loops (see grant 191, 1930). Burget, G. E.; Martzloff, K. H.; Thornton, R. C. B., and Suckow, G. R.: The Closed Intestinal Loop: II. Observations on Dogs with Jejunal and Ileal Loops and Chemical Analyses of the Blood, *Arch. Int. Med.* **47:** 593, 1931. Martzloff, K. H., and Burget, G. E.: III. Septic End-to-End Intestinal Anastomosis and a Method for Making a Closed Intestinal Loop Suitable for Physiologic Studies, *Arch. Surg.* **23:** 26, 1931.

Grant 173: Arthur F. Coca, New York Hospital, $600 for a study of avian tubercle infection (refund, $121.57). Dolgopol, V. B.: Specificity of Avian Tuberculin Reactions, *J. Infect. Dis.* **49:** 216, 1931.

Grant 175: Helen T. Parsons, University of Wisconsin, $200 for study of the physiologic effects of high protein diets (see grant 195). Parsons, Helen T.: The Physiological Effects of Diets Rich in Egg White, *J. Biol. Chem.* **90:** 351, 1931.

Grant 178: Karl H. Martzloff, University of Oregon Medical School, Portland, $150 for study of healing after gastro-enterostomy (refund, $35.20). Martzloff, K. H., and Luckow, G. R.: Mucosal Inclusions in Anterior Gastro-Enterostomies in Dogs Following Various Methods of Suturing, *Proc. Soc. Exper. Biol. & Med.* **27:** 855, 1930.

Grant 185: Daniel A. McGinty, Emory University, Georgia, $150 for study of the metabolism of lactic acid in the cardiac muscles. McGinty, D. A.: Blood Lactic Acid and the Coronary Circulation, *Proc. Soc. Exper. Biol. & Med.* **28:** 451, 1931; Studies in Coronary Circulation: I. Absorption of Lactic Acid by the Heart Muscle, *Am. J. Physiol.* **98:** 244, 1931.

Grant 186: W. W. Swingle and Joseph J. Pfiffner, Princeton University, $1,000 for the preparation and study of extract of cortex of the beef suprarenal. Pfiffner, J. J., and Swingle, W. W.: Studies on the Adrenal Cortex: III. The Revival of Cats Prostrate from Adrenal Insufficiency with an Aqueous Extract of the Cortex, *Am. J. Physiol.* **96:** 180, 1931.

Grant 188: Owen H. Wangensteen, University of Minnesota, $600 for study of intestinal obstruction. Wangensteen, O. H., and associates: Influence of Morphine on Intestinal Activity in Experimental Obstruction, *Proc. Soc. Exper. Biol. & Med.* **28:** 434, 1931; Absorption of Hydrokollag from Obstructed Bowel, *ibid.*, p. 542; Comparative Study of the Quantity of Gas in the Bowel in Simple and Closed-Loop Obstruction, *ibid.*, p. 902.

2. Incomplete

A. The work under the grant completed, account rendered of expenses, but results not published:

Grant 107, 1927: $500 to H. L. Huber, Chicago, for work on the chemical and immunologic properties of the pollens of hay fever and allied conditions. Huber, H. L.: Critical Analysis of Information Obtained from Hay Fever Sufferers, *J. Allergy* **2:** 48, 1930.

Grant 113, 1927: $500 to C. W. Apfelbach, Presbyterian Hospital, Chicago, for work on the renal function after glomerular infarction ($95.09 refunded). Miller, E. M., and Apfelbach, C. W.: Experimental Infarction of the Glomeruli in Dogs, *Arch. Path.* **4:** 193, 1927. Jensen, C. R., and Apfelbach, C. W.: Method of Making Repeated Determinations of the Intra-Arterial Systolic Blood Pressure in Dogs, *Arch. Path* **6:** 99, 1928. The final article is in course of publication.

Grant 117, 1927: $250 to W. H. Hunter, University of Oregon School of Medicine, for study of experimental chronic nephritis.

Grant 118, 1927: $1,000 to Edward Reynolds and E. A. Hooton, Harvard University, for study of the mechanism of erect posture.

Grant 123, 1927: $500 to S. R. Gifford, University of Nebraska School of Medicine, for study of the chemical properties of the normal and the cataractous lens.

Grant 150, 1929: $200 to Benjamin Friedman, Knapp Memorial Eye Hospital, New York, for the study of ocular pulsations by graphic methods. The results of the work are in the course of publication.

Grant 158, 1929: $2,000 to G. R. LaRue and A. S. Warthin, University of Michigan, for Work on the broad tapeworm in continuation of work under grants 96, 1926, and 131, 1928. The work is in progress. Vergeer, Teunis: Causes Underlying Increased Incidence of Broad Tapeworm in Man in North America, J. A. M. A. **95:** 1579 (Nov. 22) 1930.

Grant 163, 1929: $750 to George Hermann, Tulane University School of Medicine, for the study of problems of the circulation (refund, $17.80).

Grant 172, 1930: Detlev W. Bronk, University of Pennsylvania, $175 for study of the nervous regulation of the heart.

Grant 176, 1930: Fred J. Wampler, Medical College of Virginia, Richmond, $1,200 for the study of the lung involvement in human ascariasis (refund, $174.12).

Grant 177, 1930: W. T. Dawson, University of Texas School of Medicine, Galveston, $140 for chemical and physiologic study of alkaloids of the cinchona series (see grant 192). Dawson, W. T., and Newman, S. P.: Acquired Allergic Coryzal Reactions to Quinine But Not to Quinidine or Quitenine, J. A. M. A. **97:** 930, 1931.

Grant 180, 1930: Stanhope Bayne-Jones, University of Rochester, New York, $500 for the study of chemotherapy of tuberculosis by Georges Knaysi (refund, $271.30).

Grant 181, 1930: Erwin Brand, New York State Psychiatric Institute and Hospital, $700 for research in cystinuria (refund, $366.67).

Grant 182, 1930: Icie G. Macy, Merrill-Palmer School, Detroit, $500 for a study of vitamins A and B in human breast milk.

Grant 189, 1930: Ralph H. Major, University of Kansas, Lawrence, $500 for study of depressor substances in the brain, liver and pancreas.

Grant 193, 1930: Harry J. Deuel, Jr., University of Southern California, Los Angeles, $300 for study of the antiketogenic value of various carbohydrates (refund, $30.12). Deuel, H. J., Jr.; Gulick, M., and Butts, J. S.: Relative Antiketogenic Value of Glucose and Galactose, *J. Biol. Chem.* **23:** 92, 1931 (see grant 214, 1931).

Grant 192, 1930: W. T. Dawson, University of Texas School of Medicine, Galveston, $110 for further work on cinchona alkaloids (see grant 177).

Grant 190, 1930: Theodore Cornbleet, University of Illinois Medical School, Chicago, $500 for study of effect of carbohydrate metabolism and light on the skin.

Grant 191, 1930: W. E. Burget, University of Oregon Medical School, Portland, $500 for further work on the closed intestinal loop (see grants 149, 1926, and 170, 1929).

Grant 174, 1930: Alfred R. Roos, College of Medical Evangelists, Loma Linda, Calif., $1,455 for study of hay fever pollens in the Southwest.

Grant 179, 1930: George T. Pack, Memorial Hospital, New York, $300 for a study of certain clinicopathologic problems of melanoma.

Grant 183, 1930: Robert W. Hegner, Johns Hopkins University, $1,500 for study of host-parasite relations in man in continuation of work under previous grants 101 (C. A. Brant Fund), 1926; 125, 1927, and 154, 1929. Andrews, J., and Johnson, C. M.: Lethal Factors in Experimental Infections of Trypanosoma Equiperdum in Rats, *Proc. Soc. Exper. Biol. & Med.* **27:** 825, 1930. Tsuchiya, H., and Andrews, J.: A Report on a Case of Giardiasis, *Am. J. Hyg.* **12:** 297, 1930. Schumaker, E.: Balantidium Coli: Host Specificity and Relation to the Diet of an Experimental Host, *ibid.* **12:** 341, 1930. Andrews, J.; Johnson, C. M., and Dormal, V. J.: Lethal Factors in Experimental Infections of Trypanosoma Equiperdum in Rats, *ibid.* **12:** 381, 1930. Hiyeda, K.: Pathological-Anatomical Studies on Experimental Amebiasis in Kittens, *ibid.* **12:** 401, 1930. Tsuchiya, H.: A Comparative Study of Two Diverse Strains of Giardia Lamblia Stiles, 1915, *ibid.* **12:** 467, 1930. Tsuchiya, H., and Mizushima, H.: Observations on a Double Mixed Infection of Giardia Lamblia Stiles, 1915, *ibid.* **12:** 492, 1930. Tsuchiya, H.: Comparative Study of Trophozoites of Giardia Lamblia Stiles, 1915, Under Varying Conditions, *ibid.* **12:** 500, 1930. Andrews, J., and Paulson, M.: The Effect of Barium Sulphate on the Incidence of Human Intestinal Protozoa, *J. Lab. & Clin. Med.* **16:** 39, 1930. Paulson, M., and Andrews, J.: The Incidence of Human Intestinal Protozoa in Duodenal Aspirates, J. A. M. A. **94:** 2063, 1930. Manwell, R.: Further Studies on the Effect of Quinine and Plasmochin on the Avian Malarias, *Am. J. Trop. Med.* **10:** 379, 1930. Fish, F.: Coccidia of Rodents: Eimeria Monacis, *n. sp.*, from the Woodchuck, *J. Parasitol.* **17:** 98, 1930. Andrews, J., and Paulson, M.: The Incidence of Human Intestinal Protozoa, *Am. J. M. Sc.* **181:** 102, 1931. Schumaker, E.: The Cultivation of Balantidium Coli, *Am. J. Hyg.* **13:** 281, 1931. Schumaker, E.: Relation to Balantidium Coli Infection to the Diet and Intestinal Flora of the Domestic Pig, *ibid.* **13:** 576, 1931. Tsuchiya, H.: A Study of Variabilities in Dimensions and Numbers of Discharged Cysts of Giardia Lamblia (Stiles, 1915) from Day to Day Under Normal Conditions, *ibid.* **13:** 549, 1931. Fish, F.: The Effect of Physical and Chemical Agents on the Oocysts of Eimeria Tenella, *Science* **73:** 292, 1931. Manwell, R. D., and Johnson, C. M.: A Natural Trypanosome of the Canary, *Am. J. Hyg.* **14:** 231, 1931. Daniel, G. E.: The Respiratory Quotient of Balantidium Coli, *ibid.* **14:** 411, 1931.

Grant 184, 1930: Herbert F. Thurston, Indiana University, Indianapolis, $300 for study of the suturing of blood vessels.

Grant 187, 1930: A. R. Johnston, University of Cincinnati, $1,000 for a study of the toxic action of poisonous amines.

B. Active Work Still in Progress:

Grant 105, 1927: $1,800 to H. B. Ward, University of Illinois, for study of life history of broad fish tapeworm endemic in man in northern Minnesota. The work under this grant is still in progress. The work has disclosed conditions of such significance that an extensive study of the distribution and frequency of the parasite in the region in question has been undertaken by the state board of health of Minnesota. Recent work under the grant has demonstrated the presence of the worm in Iowa and Nebraska. The structure of the larva is being studied to discover, if possible, characteristics by means of which it may be differentiated from other cestode larvae in food fish. Field studies are being carried out

along the southern and western boundaries of the range of the worm to determine more definitely the distribution and frequency of the parasite itself and of its intermediate hosts as well as other factors related to its life history. The following articles have been published: Essex, H. E.: On the Life History of Bothriocephalus Cuspidatis Cooper, 1927: A Tapeworm of the Wall-Eyed Pike, *Tr. Am. Microscop. Soc.* **47:** 348, 1928. Hjortland, A. L.: On the Structure of an Adult Triaenophorus Robustus, *J. Parasitol.* **15:** 38, 1928. Ward, H. B.: Studies on the Broad Fish Tapeworm in Minnesota, J. A. M. A. **92:** 389 (Feb. 2) 1929; The Introduction and Spread of the Fish Tapeworm in the United States, De Lamar Lectures, 1929-1930, Baltimore, Williams and Wilkins Company, 1930.

Grant 133, 1928: $715 to F. L. Dunn, University of Nebraska, for spectrophotometric analysis of biologic fluids.

Grant 162, 1929: $100 to J. P. Simonds, Northwestern University Medical School, for a study of the action of cinchophen and its derivatives on the liver. Churchill, T. P., and Van Wagoner, F. H.: Cinchophen Poisoning, *Proc. Soc. Exper. Biol. & Med.* **28:** 581, 1931.

Grant, 167, 1929: $500 to Hans Jensen, Johns Hopkins University, for aid in the chemical and physiologic study of toad poisons. Jensen, Hans; and Chen, K. K.: Chemical Studies on Toad Poisons, *J. Biol. Chem.* **87:** 741, and 755, 1930.

Grant 171, 1929: $2,500 to National Research Council, for the study of undulant fever under the auspices of the council's committee on infectious abortion. Active work is in progress at the Central Brucella Station, Michigan State College, East Lansing. Huddleson, I. F.: Brucellosis: I. Significance of Brucella Agglutinins in the Blood of Veterinarians, J. A. M. A. **94:** 1905, 1930; Differentiation of the Species of the Genus Brucella, *Am. J. Pub. Health* **21:** 49, 1931. Johnson, H. W., and Shall, S. B.: Abortion Accompanies Brucella Suis Infection in a Sow, *Quart. Bull.* Agric. Exper. Station, Michigan State College **13:** 209, 1931. Johnson, H. W., and Huddleson, I. F.: Natural Brucella Infection in Swine, *J. Am. Vet. M. A.* **78:** 849, 1931. Huddleson, I. F., and Johnson, H. W.: Study of Anti-Hog Cholera Serum and Virus for the Presence of Brucella, *ibid.* **79:** 635, 1931.

Grant 194: C. H. Thienes, University of Southern California, Los Angeles, $500 for study of the relationship between the myenteric plexus and ganglions and the mesenteric nerves. Shulter, Lillian, and Thienes, C. H.: Analysis of the Actions of Cocaine on Excised Smooth Muscles, *Proc. Soc. Exper. Biol. & Med.* **28:** 994, 1931.

Grant 195, 1930: Helen T. Parsons, University of Wisconsin, $300 for further study of the physiologic effects of high protein diets (see grant 175).

Grant 196: Ward W. Summerville, Institute of Pathology, Western Reserve University, $150 for a study of the effects of anemia of the kidney.

ADDENDA TO REPORT OF THE BOARD OF TRUSTEES

TREASURER'S REPORT

Report of the Treasurer of the American Medical Association for the year ending Dec. 31, 1931

Reserve Invested as at Dec. 31, 1930	$ 895,832.00	
Bonds Purchased (cost)	1,022,580.63	
	$1,918,412.63	
Less Bonds Called	107,421.25	$1,810,991.38
Balance for Investment Dec. 31, 1930	$ 18,835.41	
Interest on Investments	59,307.26	
Interest on Monthly Bank Balance	299.07	
	$ 78,441.74	
Less Treasurer's Checks on Bonds Purchased	70,000.00	8,441.74
Invested and Uninvested Reserve as at Dec. 31, 1931		$1,819,433.12

DAVIS MEMORIAL FUND

Balance Fund Dec. 31, 1930	$ 6,087.19
1931 Interest on Bank Balance	183.97
Total Fund as at Dec. 31, 1931 on Deposit	$ 6,271.16

AUSTIN A. HAYDEN, Treasurer.

AUDITOR'S REPORT

To the Board of Trustees, January 23, 1932.
American Medical Association, Chicago, Illinois.

Dear Sirs:

In accordance with your instructions, we have examined the accounts of the American Medical Association, for the year ended December 31, 1931, and have prepared therefrom, and append hereto, the statements undermentioned:

Exhibit "A"—Balance Sheet, as at December 31, 1931.
Exhibit "B"—Income Account, for the year ended December 31, 1931.
Schedules, for the year ended December 31, 1931:
Schedule "1"—Journal Operating Expenses.
Schedule "2"—Association and Miscellaneous Expenses.

In our opinion, based on our examination and information furnished to us, the accompanying Balance Sheet and relative Income Account set forth the financial position of the Association as at December 31, 1931, and the results of its operations for the year ended on that date, subject to the following qualifications and observations:

(1) The inventories of Materials, Supplies and Work in Progress in the amount of $77,107.33, are stated in accordance with affidavits sworn to by responsible officials of the Association and have not been verified by us in any way.

(2) In accordance with the established practice of the Association, no provision has been made for (*a*) accrued interest on bonds, (*b*) memberships due and unpaid, (*c*) accrued salaries and wages, and (d) accrued taxes.

(3) Depreciation as reflected in the Income Account (Schedules "1" and "2") has been computed on diminishing values at December 31, 1931, at rates which normally apply to cost of buildings and equipment. Additional depreciation in the amount of $119,261.56 was placed on the books at December 31, 1931, by separate entry, representing 18% on the diminished value of Buildings at that date, $100,505.07, and 10% on the diminished value of Machinery at that date, $18,756.49. This additional depreciation was taken in order to bring the value of those assets down to what was considered to be their sound value at December 31, 1931, and the entire additional charge has been absorbed in the operations of the year 1931.

(4) Subscriptions paid in advance represent an estimated amount based on cash received for subscriptions for the year 1932, received in the month of December, 1931. This conforms with the method used in prior years.

(5) Advance payments on publications represent an estimated amount of prepaid subscriptions to HYGEIA, $118,125.76, plus $12,278.88 received in advance for January advertising and directory service.

As stated in our report dated January 16, 1931, covering the examination of the accounts for the year ended December 31, 1930, there are certain lawsuits pending against the Association or against some officer for whose alleged libel the Association is sought to be made liable. We have received a letter from the attorneys of the Association confirming the opinion previously expressed by them to the effect that the claims, while large in amount, are not likely to be sustained if the experience of the Association in dealing with such matters during a number of years past is taken as a criterion.

Fidelity Insurance is carried against the undermentioned officers and employees of the Association in the amounts here stated:

Dr. Austin A. Hayden, Treasurer	$10,000.00
Dr. Olin West, General Manager	10,000.00
E. C. Shelly, Cashier	10,000.00
E. A. Hoffman, Assistant Cashier	2,000.00
Sundry Employees (nine, $1,000.00 each)	9,000.00
Total Fidelity Insurance	$41,000.00

We have pleasure in reporting that the books are maintained in excellent condition and that every facility was afforded us for the proper conduct of the examination.

Yours truly, PEAT, MARWICK, MITCHELL & CO.

EXHIBIT "A"

BALANCE SHEET AS AT DECEMBER 31, 1931

ASSETS:		
Property and Equipment (at cost, less depreciation):		
Real Estate and Buildings		$ 771,442.83
Machinery		150,051.92
Type and Metal		15,339.42
Furniture and Equipment		58,635.17
Chemical Laboratory		3,413.79
Library		377.47
Total Property and Equipment		$ 999,260.60
Investments (at cost):		
U. S. Government Securities	$ 900,577.13	
Railroad, Municipal and other bonds	910,414.25	1,810,991.38
Cash held by Treasurer for Investment		8,441.74
Cash in Bank and on Hand—General Account		151,670.62
Temporary Investment—Certificate of Deposit		100,000.00
Accounts receivable:		
Advertising	$ 82,094.69	
Co-operative Medical Advertising Bureau	14,217.60	
Reprints	6,109.61	
Directory—12th Edition	16,711.60	
Miscellaneous	2,633.39	121,766.89
Note Receivable (Due Dec. 26, 1931)		$ 489.50
Inventories of Materials, Supplies and Work in Progress		77,107.33
Expenditures on Publications in Progress		50,539.76
Prepaid Expenses—Insurance, etc		2,435.46
Total		$3,322,703.28

LIABILITIES:		
Accounts Payable:		
Co-operative Medical Advertising Bureau		$ 13,183.14
Miscellaneous		22,294.15
		$ 35,477.29
Pershing Hall Medical Memorial		2,508.10
Subscriptions paid in Advance		122,289.90
Advance Payments on Publications		130,404.64
Net Worth:		
Association Reserve Fund	$ 250,000.00	
Building Reserve Fund	750,000.00	
Capital Account:		
Amount thereof as at December 31, 1930	$2,552,369.63	
Deduct—Transfer to Building Reserve Fund	750,000.00	
	$1,802,369.63	
Net Income for the year ended December 31, 1931	229,653.72	2,032,023.35
Net Worth as at December 31, 1931		3,032,023.35
Total		$3,322,703.28

EXHIBIT "B"

INCOME ACCOUNT

FOR THE YEAR ENDED DECEMBER 31, 1931

JOURNAL:		
Gross Earnings:		
Fellowship Dues and Subscriptions		$ 611,675.59
Advertising		982,884.13
Jobbing		95,937.37
Reprints		3,056.98
Books		13,658.00
Insignia		5,286.92
Miscellaneous Sales		7,067.93
Interest		11,245.29
Gross Earnings from Journal		$1,730,812.21
Operating Expenses—Schedule "1"		1,000,635.23
Net Earnings from Journal		$ 730,176.98
Miscellaneous Income:		
Rents	$ 1,200.00	
Sundry Publications	41,519.00	42,719.00
Association Income:		
Income from Investments	$ 52,727.07	
Profit on Sales of Securities	2,151.26	
Miscellaneous	375.38	55,253 71
Gross Income		$ 828,149.69
Association Expenses—Schedule "2"	$ 330,401.69	
Miscellaneous Expenses—Schedule "2"	268,094.28	598,495.97
Net Income		$ 229,653.72

SCHEDULE "1"

JOURNAL OPERATING EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1931

Wages and Salaries			$ 451,158.11
Editorials, News and Reporting			12,691.59
Paper—Journal Stock			253,922.69
Paper—Miscellaneous			3,510.36
Electrotypes and Engravings			19,765.58
Binding			447.39
Ink			4,597.78
Postage—First Class			33,263.89
Postage—Second Class			60,762.98
Journal Commissions			9,383.03
Collection Commissions			2,047.16
Discounts			31,329.55
Express and Cartage			5,141.62
Exchange			3,754.86
Office Supplies			2,678.39
Telephone and Telegraph			2,976.70
Office Jobbing			11,040.11
Power and Light			7,434.26
Factory Supplies			10,894.21
Repairs and Renewals—Machinery			8,480.79
Loss on Bad Debts			2,593.08
Miscellaneous Operating Expenses			18,200.38
Total JOURNAL Operating Expenses before provision for Depreciation			$ 956,074.51
Depreciation on Equipment (computed on diminishing balances):			
*Machinery	% 20	$37,512.98	
Furniture and Equipment	% 10	5,271.73	
Factory Equipment	% 10	1,243.29	
Type	% 10	532.72	44,560.72
Total Journal Operating Expenses			$1,000,635.23

* Including special provision for depreciation.

SCHEDULE "2"

ASSOCIATION AND MISCELLANEOUS EXPENSES

FOR THE YEAR ENDED DECEMBER 31, 1931

Association Expenses:	
Association	$ 90,582.84
Health and Public Instructions	19,037.55
Pharmacy and Chemistry	25,598.84
Chemical Laboratory	25,515.72
Medical Education and Hospitals	66,728.93
Organization and Field Secretary	3,287.57
Therapeutic Research	3,584.06
Legal Medicine and Legislation	29,197.08
Bureau of Investigation	21,291.86
Physical Therapy	11,112.84
Bureau of Association Exhibits	4,043.01
Bureau of Medical Economics	10,667.37
Food Committee	10,239.96
New Property	9,134.75
Laboratory Depreciation (10% on diminishing balances)	379.31
Total Association Expenses	$ 330,401.69
Miscellaneous Expenses:	
Insurance and Taxes	$ 25,253.65
Legal and Investigation	32,934.42
Building Expenses	30,615.10
*Building Depreciation (20% on diminishing balances)	111,672.30
Fuel	5,617.97
Sundry Publications	61,958.90
Library Depreciation (10% on diminishing balances)	41.94
Total Miscellaneous Expenses	$ 268,094.28

* Including special provision for depreciation.

REPORT OF THE JUDICIAL COUNCIL

To the Members of the House of Delegates of the American Medical Association:

The tendency toward radical change in the relations of physicians and medical societies toward the public, as well as signs of change in the relations of physicians toward one another, has been clearly reflected in a constantly growing stream of inquiries addressed to the Judicial Council during the year covered by this report. It is probable that in many instances these inquiries have grown out of conditions resulting from the widespread financial depression, which has borne heavily on physicians and all the institutions with which they are most directly concerned. There was, however, abundant evidence before the development of the present economic crisis that many forces were pressing for the adoption of new methods of medical practice and for changes in the relations of physicians, as individuals and as organized groups, toward the public and toward institutions and organizations, and also for revolutionary changes in the very traditions of the profession with respect to the obligations and privileges of physicians in their contacts one with another. These forces have in some instances been sadly misdirected and will result in disaster to medicine and to the public. In other instances they have instituted movements designed to secure adjustments, based on the results of careful and critical study, that may insure the extension of medical service and increase its efficiency.

The Judicial Council, in its efforts to deal with the many problems submitted for its consideration, has been mindful of the fact that it is a very serious matter when it is proposed to overturn the age-old traditions of a profession, to institute new and unproved methods of practice, and to establish an entirely new basis of public and professional relations. The complexities of modern society may make it imperative that some changes shall be made, but the duty of the organized profession is to see to it that any and all proposals for change, from whatever source, shall be scrupulously and deliberately examined with the view of determining their ultimate value. Decisions should not be made on the basis of feasibility for the immediate present but should be made in the light of the experience of the profession, the nature of its service, the imperative need for maintaining professionalism and the absolute necessity for unhampered scientific advancement, and with the utmost regard for the best interests of the people.

THE QUESTION OF PATENTS

For several years the Judicial Council has given exhaustive consideration to suggestions to the effect that the section of the Principles of Medical Ethics dealing with "Patents and Perquisites" should be changed to permit physicians to secure patents on the products of their inventive genius. After having

given much careful thought to this matter, the Council sought the opinions of a relatively large number of representative physicians in various parts of the country. Responses received indicated an overwhelming sentiment to the effect that there should be no change in the present provisions of the Principles of Medical Ethics with respect to patents.

MEMBERSHIP IN MORE THAN ONE SOCIETY

It seems obvious that it is intended, under the scheme of medical organization in the United States, that no member shall hold membership in more than one component county society or in more than one constituent state association. Moreover, it appears to be the intent of organizational law that the component county medical society shall have jurisdiction with respect to the membership of physicians residing and practicing within its own territory; otherwise there would be confusion and conflicts that might eventually undermine the strength of our organization. In the opinion of the Judicial Council it is unfortunate and prejudicial to the efficiency of all the units of organization that some component societies and constituent associations have admitted members who reside and practice in other jurisdictions. In some instances such members hold membership in two component societies and in two constituent associations. This is subversive of democratic principles. In other instances, men residing in one state have been taken into membership in another state but do not hold membership in the component societies or the constituent associations of the states in which they reside. This is a situation that demands correction. The Judicial Council recommends that the House of Delegates request all constituent associations to make such amendments of their organic laws as may be necessary to exclude from membership any physicians other than those who reside and practice within the lines of the particular state concerned, except in those instances in which the associations of the adjoining states may waive jurisdiction.

The exception indicated is suggested for the benefit of eligible physicians who reside near state lines and find it desirable, for good and sufficient reason, to affiliate with societies in adjoining states. It is also intended to serve the interest of physicians who maintain offices and practice in cities or towns located on state lines and whose homes are located on the other side of such lines.

Dual representation is not in accord with democratic principles. It is important that jurisdiction in matters of professional relations and discipline shall be clearly established.

INVESTIGATION OF HEALTH AND HOSPITAL ASSOCIATIONS

The House of Delegates at the Philadelphia Session adopted a report of the Reference Committee on Rules and Order of Business providing that the Judicial Council should initiate a study of "hospital and health associations." The Council has given consideration to this matter and it has been discussed in official reports submitted to the House of Delegates, but it is now being made a part of studies undertaken by the Bureau of Medical Economics and will, no doubt, be reported on by that bureau.

THE WORD "ELIGIBLE"

It is evident that there is misunderstanding on the part of the officers of some societies concerning the implications of the word "eligible" as applied to applicants for membership. The word as used in the constitution or by-laws of a medical society does not imply that the society is under any compulsion or obligation to elect an applicant to membership but simply means that the application of any reputable, registered physician shall be considered in the prescribed manner and the applicant elected or rejected as the vote of the members may indicate.

Similarly, there appears to be some misunderstanding concerning the significance of "transfer cards." No county society is compelled or obligated to accept into its own membership a "transfer" from another county society unless there is specific provision in its by-laws to that effect. A "transfer card" simply indicates that its holder is a member in good standing in some county society. Unless such a card is given validity as an authorization for admittance by express provision of the laws of the state association and the county society concerned, it has no weight whatever except as an evidence of the membership in another county society.

APPEALS

Since the last annual session, three appeals have been made to the Council from decisions of bodies of state medical associations. Only one of these appeals had been heard up to the time when this report was prepared.

The Council would again urge on the attention of the officers of state associations and of appellants the importance of careful and thorough preparation of all statements to be submitted in connection with appeals. It is essential for the purposes of fairness and justice that procedures clearly defined in organizational law shall be scrupulously followed in all cases involving disciplinary action. The by-laws of component county medical societies and of constituent state medical associations are supposed to prescribe definitely the procedures to be followed; if they do not they should be properly amended. It is imperative that boards of censors of county medical societies, the councils of state associations, and, especially, the presiding officers of these bodies shall be thoroughly familiar with the provisions of the laws of these bodies and that they shall use all diligence in seeing to it that the law is followed. It is equally important that appeals and answers shall be carefully prepared so that all appellate bodies may act fairly and intelligently on the basis of fact.

DONALD MACRAE, JR.

Donald Macrae, Jr., a beloved member of the Judicial Council, died at his home in Des Moines, January 11. He was made a member of the Council at the annual session of the Association held in Washington in 1927, and was a member of the House of Delegates for a number of years. In his official capacity, as well as in his professional relations, Dr. Macrae discharged his duty with marked fidelity and with unyielding courage. Through his willingness to bear his full share of every burden and by his kindly consideration for his associates he endeared himself to the members of the Council. A tribute to the man and an expression of the esteem and affection in which he was held by his fellows has been recorded in the archives of the Judicial Council.

Respectfully submitted.

F. W. CREGOR.
J. B. HERRICK.
W. F. DONALDSON.
G. E. FOLLANSBEE, Chairman.
OLIN WEST, Secretary, ex officio.

REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

To the Members of the House of Delegates of the American Medical Association:

I. COMMISSIONS OF THE HOUSE OF DELEGATES

1. *The Investigation of Hospitals for Mental Patients.*—At the annual session of 1930, the following resolution was adopted:

Resolved, That the Council on Medical Education and Hospitals be requested to make a thorough investigation of all hospitals caring for mental patients within the next one or two years whereby a more accurate knowledge of the situation may be obtained and the need of further developments in the field be pointed out.

Since the last annual session this study of hospitals caring for nervous and mental patients has been carried on by the Council's staff with the results recorded in a preliminary report read by Dr. John M. Grimes at the Annual Congress in February, copies of which have been sent to all members of the House of Delegates. Of the 561 institutions of this character in the country, personal visits have been made to 415 (April 1) and written reports received from 461. The 146 hospitals not yet seen are all located in the New England or Middle states. It is expected that this canvass will be completed early in the summer and that the results of the study may be presented in a final report next winter.

2. *Intern Training.*—At the annual session of 1931 the following resolution was adopted by the House of Delegates:

Resolved, That acceptable medical schools should assist all of their students in obtaining intern training, and that after the academic year 1933-34, all acceptable medical colleges complete arrangements so that each annual announcement will contain a record of the hospital training of the graduating class of the year before.

Notice has been sent the deans of all approved medical schools that, beginning in 1933, publication will be required of the hospital service of recent graduates, or students in their fifth year. Thirty-nine schools have already included such a record in their announcement, and of the remainder all but one have indicated their intention to comply with the request of the Council.

3. *Classification of Foreign Medical Schools.*—In 1931 the House of Delegates also adopted the following resolution:

Resolved, That the Council on Medical Education and Hospitals make a classification of foreign medical schools where students of American citizenship are in attendance, along the lines applied in the classification of American medical colleges.

A tabulation of American students in foreign medical schools was published in the Educational Number of THE JOURNAL for Aug. 29, 1931. Inquiries sent to 165 schools, of which 120 have replied, indicate that 1,041 Americans are studying abroad.

Such information as is available regarding standards of medical education in Europe, and also the experience of this Council, warn that the attempt to classify schools in other countries than our own may lead to diplomatic complications. Further, past experience indicates that a classification based on documentary evidence alone is unreliable. The Council, therefore, at its meeting on February 14, on recommendation of its Subcommittee on Medical Education, adopted the following resolution:

Resolved, That a valid classification of the medical schools in foreign countries can be made only on the basis of personal visitation and study by a qualified representative of the Council and that such classification be therefore deferred until adequate funds are available for this purpose.

4. *Graduation of Unqualified Students.*—The House of Delegates also adopted the following resolution:

Resolved, That the Council on Medical Education and Hospitals pursue to its logical conclusion the investigations begun in regard to "repeaters" among medical students to the end that unqualified students may not be graduated and commercially tainted medical schools may thereby be disorganized.

The study reported last year was continued and the results for the session 1930-1931 published in the Educational Number of THE JOURNAL, Aug. 29, 1931. The consolidation of these figures with those reported for the session of 1931-1932 is made in the accompanying chart. It may be assumed that those schools which have a two year average of 5 per cent or less are maintaining reasonable academic standards.

5. *Discrimination Against American Graduates Abroad.*—The House of Delegates also adopted the following resolution:

Resolved, That the attention of the House of Delegates be brought to this situation (discrimination exercised against graduates of American medical colleges in various foreign countries relative to the granting of licensure by reciprocity or permission to practice medicine under conditions which pertain relative to graduates of local medical schools) and that the Council on Medical Education and Hospitals of the American Medical Association be instructed by the Board of Trustees to make a survey of the conditions existing, and undertake by bringing the matter to the attention of the appropriate authorities in the countries in which such discrimination exists to secure for American physicians the privileges granted to physicians coming from those countries to the United States.

Information obtained from the State Department proved to be four years old. Therefore in January, 1932, a letter was sent to sixty-five countries requesting an official statement of the requirements to be met by Americans desiring to practice medicine in these respective countries. When this information has been received, translated and tabulated, the Council will be in a position to revise and bring up to date its book on the regulations of the states and of foreign countries concerning the practice of medicine. As our own states vary widely in their dealings with physicians from abroad, some being very strict, and as other countries may not deal directly with our state governments, it is evident that until we can arrive at some standard which is uniform for the entire nation, we can make no progress toward securing greater privileges for our physicians who would practice abroad.

6. *Certification of Specialists.*—The House of Delegates, in adopting section 11 of the report of the Reference Committee on Medical Education, requested the Council "to investigate the entire subject (of specialization) and to make recommendations looking to the establishment of proper qualifications of physicians who shall engage in special practice." At the Annual Congress in February a symposium was arranged dealing with the "Certification of Specialists." Several important papers were presented and ably discussed. It is evident that at least four agencies are at work in this field and that some form of cooperation between them is the only practical solution of the problem. These agencies are, first, voluntary associations, such as the American College of Surgeons and the American Board for Ophthalmic Examinations; second, those universities which

Chart 1.—Showing the number of repeaters in the first year class of medical schools.

have formulated and put into operation a definite curriculum for the training of specialists; third, the Council on Medical Education and Hospitals of the American Medical Association, which has prepared lists of qualified clinical pathologists and radiologists, and, fourth, those most vitally concerned but who have as yet taken no action in this matter, the state licensing boards. Faced with this complicated situation, the Council is not yet prepared to make any recommendations; but it reports progress. It is desired, however, at this time to call attention

to the method of dealing with this situation that has been adopted in the province of Alberta. The regulation reads:

"No person shall advertise or hold himself out to the public as a specialist or as being specially qualified in any branch of any class or system of practice in this section mentioned, without having received from the Registrar of the University of Alberta a certificate of having complied with such conditions precedent as to qualification or fitness as may be prescribed by the Senate of the said University."

II. Activities of the Year

7. *The Annual Congress.*—The Annual Congress on Medical Education, Medical Licensure and Hospitals was held on February 15 and 16, the program having been reduced to two days. Despite the economic situation, the attendance was larger than in previous years. Attention was focused on such subjects as "Specialization," "Contract Practice," "The Care of the Mentally Ill," "The Care of the Veteran," and "The Teaching of Radiology."

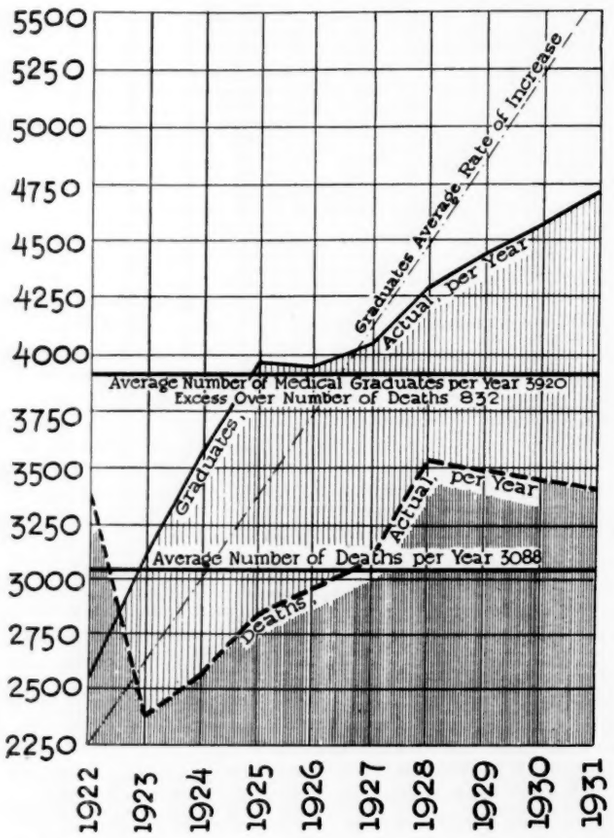


Chart 2.—Showing the increase in medical graduates and the number of deaths in the medical profession.

8. *New Medical Schools.*—(*a*) At the last annual session the Council reported on the situation that existed at the University of Mississippi. Since that time a new governor and new legislature have been elected, and those responsible for the medical school have expressed the hope that political interference will cease and that adequate financial provision will be made. As this report is written, definite information has not been received regarding the budget.

(*b*) At the meeting held on June 8, 1931, the Council gave its approval to the first two years of work at the University of Southern California and endorsed plans for the inauguration of the third year (clinical instruction) during the session of 1931-1932.

(*c*) Early in 1931 the Louisiana State University announced its intention to establish a medical school. A laboratory building was erected on the grounds of the Charity Hospital, New Orleans. A faculty has been appointed and two classes of students, first and third, have been enrolled. The dean is Dr. Arthur Vidrine, also superintendent of Charity Hospital.

(*d*) It is reported that the Eclectic Medical College of Cincinnati has reopened, but the Council has not been officially apprised of this action.

9. *The Number of Medical Graduates.*—Since 1922 the number of medical graduates in the United States has steadily increased, as shown in the accompanying chart. The number of graduates in 1932 will exceed that of 1931 and represents about 50 per cent more than the loss by death of the medical profession each year.

10. *School Inspections.*—Twelve medical schools were visited during the year. This important work will be continued for the purpose of keeping in touch with developments in the stronger schools, as well as for the purpose of aiding those less fortunate.

11. *Special Numbers of The Journal.*—During the past year the Council has contributed to the publication of four special numbers of THE JOURNAL. The program for the current year calls for five: one for Radiology, March 19; one for State Board Statistics in April; the report on Hospitals in June; the record of Medical Education in August, and the Council's List of Clinical Pathologists in October. A handbook of useful information for interns is in course of preparation.

12. *Supervision of Hospitals.*—(*a*) Since the last report to the House of Delegates, the Council's activities regarding hospitals have been much concerned with the preliminary survey of hospitals for mental patients, referred to in paragraph 1, while at the same time there has also been more effective supervision of the hospitals approved for internships and residencies in specialties. Lists of such hospitals have been revised three times and new editions distributed.

(*b*) The staff of trained full time hospital examiners has been increased to four, all of whom are physicians.

(*c*) The "Essentials of a Registered Hospital" have been completely revised and materially strengthened. See Supplement A.

(*d*) The hospital activities of the Council for the year ended April 1, 1932, may best be summarized as follows:

Registered Hospitals

Hospitals now on register	6,612
Hospitals removed from register and refused registration	352
Hospitals admitted to register	245
Net loss	107
Total hospitals inspected during this period	585

Hospitals Approved for Internships

Hospitals approved for internships, present number	684
Hospitals removed from intern list	10
Hospitals admitted to intern list	29
Net gain	19

Hospitals Approved for Residencies in Specialties

Hospitals approved for residencies, present number	371
Hospitals removed from residency list	8
Hospitals admitted to residency list	26
Net gain	18

During the year, special inquiries were made regarding all of the 605 hospitals that were refused registration. Definite information regarding the existence and present status of ethics in these hospitals was received concerning 546, there being only 59 from which no report has been obtained during the past twelve months.

The Council's Lists of Physicians Specializing in Pathology, Clinical Pathology and Radiology

Physicians specializing in pathology and clinical pathology:	
Net gain during year	236
Total on accepted list at present	421
Physicians specializing in radiology:	
Net gain during year	71
Total on accepted list at present	1,003

III. Comment and Recommendations

13. It appears that, as a result of changing social conditions, the practice of medicine is becoming hospitalized, in the broad sense of the term, to include the institutional care of ambulatory as well as bedfast patients. It should be recognized that one of the most important of the many contributory factors is the benefit which accrues to the physician, namely, a saving of time and money, and especially the improvement of the service which he renders to his patient through the agency of the trained personnel which the hospital places at his command. The Council, therefore, with its staff of four trained men constantly

in the field, will continue its efforts to improve this all important phase of medical practice.

14. The "Essentials of a Registered Hospital" were approved by the House of Delegates at the Minneapolis session in 1928. Experience has shown that in some respects a more explicit statement is desirable. The Council, therefore, on Feb. 14, 1932, amended this statement and now asks the approval of the House of Delegates for these "Essentials" in the form submitted in Supplement A.

15. The "Essentials of an Approved Clinical Laboratory" were adopted by the Council in compliance with instructions received from the House of Delegates in 1923. The rating of laboratories has been found to be, in some instances, misleading, because of changes in personnel. The Council has found it more practical to emphasize the qualifications of the pathologist than of the place in which he works, and to this end, at its February meeting, adopted a statement of the "Essentials for the Listing of Physicians Specializing in Clinical Laboratory Work and Pathology." The approval of the House of Delegates is requested for these "Essentials" as submitted in Supplement B.

16. The "Essentials of an Approved Department of Radiology or Roentgenology" were approved by the House of Delegates at Portland in 1929. As in the case of the laboratory workers, it has been found desirable to place the emphasis on the qualifications of the individual roentgenologist or radiologist rather than on the physical environment in which he works. The Council, therefore, at the meeting of February 14 adopted the following statement: "Essentials for Admission to List of Physicians Specializing in Radiology." The approval of the House of Delegates is requested for these Essentials as submitted in Supplement C.

Respectfully submitted.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS.

RAY LYMAN WILBUR, Chairman.
JAMES S. MCLESTER.
EMMETT P. NORTH.
REGINALD FITZ.
MERRITTE W. IRELAND.
CHARLES E. HUMISTON.
DEAN LEWIS.
WILLIAM D. CUTTER, Secretary.

SUPPLEMENT A

ESSENTIALS OF A REGISTERED HOSPITAL

General Statement.—The American Medical Association gives recognition to hospitals by admitting to the Hospital Register those that are found to qualify according to the essentials contained in the following paragraphs.

Registration is a basic distinction between all recognized hospitals and those that are refused recognition. It is a prerequisite to the consideration of a hospital for approval for interns or for residencies in specialties.

The registration of hospitals, the approval of hospitals for interns, approval for residencies in specialties, and all other service of the Association regarding hospitals is carried on by the Council on Medical Education and Hospitals.

It is the desire of the Council to cooperate in every way for the improvement of hospital service, whereby the sick and injured may be provided with scientific and ethical medical care.

The Council does not have nor does it assume legal authority over any hospital. It recognizes clearly that the officers in charge of such institutions have the unquestioned right to conduct the hospitals in any way they may deem wise. If a hospital desires to have its name appear on the American Medical Association Hospital Register and thus have the endorsement of that association, it should be willing to comply with the principles which the Council on Medical Education and Hospitals considers necessary.

Essentials of a Registered Hospital.—Hospitals seeking admission to the register should have the following qualifications:

1. *Organization.*—The organization should consist of a board of trustees or other supreme governing body having final authority and responsibility and an executive officer or superintendent to carry out the policies adopted by the governing body. The executive officer should be assisted by adequate competent personnel.

Regardless of the form of organization, the hospital should function primarily in the interests of the sick and injured of the community.

2. *Staff.*—This constitutes the most important essential. The staff should be organized and composed of regular physicians who are properly qualified as to training, licensure and ethical standing.

Staff membership and the use of the hospital's facilities must be limited to doctors in medicine. Where cult practitioners, osteopaths, chiropractors or other healers outside the scope of regular medicine are allowed to use the hospital's diagnostic facilities, to prescribe for or treat patients in the hospital, or to enter orders or other data on the case records, such a hospital obviously cannot be recognized or endorsed by the American Medical Association.

Regular staff conferences should be held at least monthly and preferably more often. At these meetings, all deaths that occur during the period intervening between meetings, danger-line cases, and patients who do not respond to treatment should be discussed as well as all unusual and especially interesting cases. When postmortem examinations have been performed there should be a presentation of the clinical aspect of the patient and the postmortem observations. Interesting pathologic specimens should be presented and discussed with regard to the preoperative signs and symptoms.

Minutes of staff conferences should be kept and filed with the hospital records. The activity of the staff as to scientific meetings and clinical and pathologic conferences is an index to the scientific mindedness and progressiveness of the group.

3. *Nurses.*—A competent nursing staff should be provided by employing an adequate number of registered nurses who are graduates of schools of nursing recognized by the state board of nurse examiners, or by maintaining such a school.

All nursing should be supervised by qualified registered graduates.

4. *Records.*—An adequate record system should be maintained. No particular system or set of forms is recommended, since there are many excellent forms. The average case record should include at least a brief medical history, physical examination, laboratory reports, diagnosis, operative record, progress notes, nurses' notes and summary. Case records should be complete in every department and reviewed and signed by the attending physicians before they are placed in the permanent file. Roentgenologic interpretations, pathologic descriptions and diagnoses of tissues removed in the operating room, and (when an autopsy has been performed) a description of postmortem observations, should be included with the patient's record.

Case histories and physical examinations should be recorded in the patient's chart within twenty-four hours after the patient has been admitted to the hospital. A patient should not be operated on, except in the case of emergency, when the history, physical examination and routine laboratory work have not been completely recorded in the chart. The duty of recording these data falls on the attending physician and he should be held directly responsible for the case records.

Monthly and annual analyses of hospital service should be made in order that the staff may be in a position to improve its service.

5. *Pathology.*—All tissues removed in the operating room should be examined, described and diagnosed by a competent pathologist excepting tissues, such as tonsils and teeth, in which the pathologic changes are quite obvious.

A physician-pathologist should be employed on a full time or part time basis. When this is not practicable, arrangements should be made with a consulting pathologist for tissue diagnosis, postmortem work and the interpretation of the more complicated tests and determinations in clinical and surgical pathology, as well as in general clinical laboratory work. The pathologist preferably should be one listed by the Council on Medical Education and Hospitals of the American Medical Association. The Council's list of physicians specializing in clinical pathology or pathology is available on application.

Autopsies.—Every effort should be made to secure consent for autopsies, which should be performed by a pathologist or the best qualified other physician available.

6. *Radiology.*—The hospital should provide or have ready access to radiologic equipment and service. When a full time

or part time physician-roentgenologist cannot be employed, the services of such a consultant should be secured. Radiologic interpretations must be made only by a competent roentgenologist. A description of the roentgenologic examinations should be placed in the patient's chart. The physician-roentgenologist preferably should be one listed by the Council on Medical Education and Hospitals of the American Medical Association.

A list of physicians specializing in radiology and roentgenology is available on application.

7. *Ethics.*—In order that a hospital may be eligible for registration it will, of course, be expected that the staff and management conform to the principles of medical ethics of the American Medical Association with regard to advertising, commissions, division of fees, secret remedies, extravagant claims, overcommercialization and in all other respects.

SUPPLEMENT B

ESSENTIALS FOR THE LISTING OF PHYSICIANS SPECIALIZING IN CLINICAL LABORATORY WORK AND PATHOLOGY

Admission to the list is open to all physician-pathologists engaged in clinical pathologic work in accordance with the "Essentials," whether connected with a hospital or conducting an independent clinical laboratory. The work of surveying and compiling a list of qualified clinical pathologists according to these "Essentials" is done by the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago.

Definition.—A physician holding himself out as a clinical pathologist or pathologist may be defined as follows: One who is a graduate in medicine having specialized in clinical pathology, bacteriology, pathology, chemistry, or other allied subjects for at least three years subsequent to graduation, who is in good standing and has been duly licensed to practice medicine.

Qualifications.—(*a*) The pathologist or clinical laboratory director shall be on a full or part time basis with a laboratory for the practical application of one or more of the fundamental sciences by the use of specialized apparatus, equipment and methods, for the purpose of ascertaining the presence, nature, source and progress of disease in the human body. He should devote the major part of his time to work in this field.

(*b*) Clinical pathology should be practiced on the same scientific and ethical basis, whether in the hospital or in a detached laboratory. The work represents the practice of medicine as in other specialties.

The pathologist may make diagnoses only when he is a licensed graduate of medicine, has specialized in clinical pathology for at least three years subsequent to graduation from medical college, is reasonably familiar with the manifestation of disease in the patient, and knows laboratory work sufficiently well to direct and supervise reports.

(*c*) Assistants: The clinical laboratory director or pathologist may have a corps of qualified assistants and technicians, responsible to him, and for whom he is responsible, to carry out promptly, intelligently and accurately the several kinds of service the laboratory offers. All their reports, not only of tissues but also of all bacteriologic, hematologic, biochemical, serologic and pathologic data, should be made to the pathologist.

Scope.—A general clinical laboratory should be prepared to render the following services:

(*a*) Hematologic: Blood counts, blood groupings and coagulation tests, and tests for blood parasites in general.

(*b*) Biochemical: Qualitative and quantitative analyses of urine, blood, gastric contents, body fluids, feces, intestinal contents and cerebrospinal fluids; renal and hepatic function tests and basal metabolism.

(*c*) Bacteriologic: Bacteriologic diagnoses; preparation of vaccines and blood and body fluid cultures.

(*d*) Serologic: Serologic diagnoses; agglutination, complement fixation, or precipitin and lysis tests.

(*e*) Pathologic: Preparation of paraffin, celloidin or frozen sections, microscopic and gross pathologic specimens and necropsies.

(*f*) Parasitologic: Protozoal and zoological diagnoses.

(*g*) Metabolic: Disorders of metabolism.

(*h*) Cardiologic: Disorders of the heart.

It is of course not expected that the candidate shall be prepared to render all the services mentioned, since the work must necessarily be diversified in larger laboratories and in smaller laboratories where it would not be practical to have equipment and setups that would be used only occasionally. Since many pathologists limit their work to one branch of the specialty, referring certain items, far more efficiency is to be expected.

Reports.—Reports should be made through the clinical laboratory director or through the pathologist in the department. Reports shall be made solely to the physician in charge of the patient and should be signed by the pathologist. All blanks for reports and other documents should have the name of the director printed on them and, if of a diagnostic or prognostic character, the name of the staff physician also.

Records.—Full records of all examinations made by the pathologist, suitably indexed and filed, are essential. Every specimen analyzed in the laboratory should be given a serial number, which should follow that specimen in the records and reports. When the laboratory report concerns a hospital patient, an exact transcript of the laboratory record should be appended to the hospital case record. Each specimen submitted to the laboratory should be accompanied by pertinent clinical data.

Library.—The laboratory should be provided with, or have convenient access to, a library including current scientific books and journals on all the various subjects required in its work.

Fees.—There should be no dividing of fees or rebating between the laboratory or its director and any physician, corporate body or group.

Publicity.—Publicity should be in professional good taste and be limited to statements of fact, as the name, address and telephone number of the laboratory; names and titles of the director and other active responsible personnel; fields of work covered; office hours; directions for sending specimens, and the like, and should not contain misleading statements or claims of unusual superiority. It should not advocate medical fads nor lay undue stress on the importance of laboratory observations.

Only the names of those rendering regular service to the laboratory should appear on letterheads, or any other form of publicity as being connected with the laboratory.

Advertising matter should be directed only to physicians either through bulletins or through recognized technical journals, and never to the nonprofessional public, as, for example, by announcements in popular journals and periodicals, circulars, pamphlets, telephone lists or other means.

SUPPLEMENT C

ESSENTIALS FOR ADMISSION TO LIST OF PHYSICIANS SPECIALIZING IN RADIOLOGY

PHYSICIANS ELIGIBLE

Consideration for admission to the list is open to all regular licensed physicians engaged in radiologic work in accordance with the essentials, whether connected with a hospital or conducting an independent laboratory.

1. QUALIFICATIONS

(*a*) The candidate shall be a graduate of a medical school that is approved by the Council on Medical Education and Hospitals and shall be licensed to practice medicine in the state in which his department is located. He shall also have had special training, such as is approved by the Council, in radiology, roentgenology or radium therapy at an acceptable school —preceptorship, hospital or clinic, department of radiology, roentgenology or radium therapy—for a period of at least three years, or, in lieu of such training, shall have had a minimum of five years' experience in the exclusive practice of radiology, roentgenology or radium therapy. He must be a man of good standing in the medical profession, and particularly among those specializing in radiology. He shall either be on a full time basis or have definite hours of attendance at the department, such hours to be ample to insure the element of medical consultation in every examination or treatment.

(*b*) The department shall be under the direction of a physician radiologist, roentgenologist or radium therapist, as the

circumstances may require. The director shall be responsible for all examinations and treatments. He shall be responsible for all professional assistants and for the efficient maintenance of the department.

Physicians employed by laboratories which are under lay control and direction will not be eligible for consideration for this listing.

(*c*) *Assistants.*—The director may have a corps of qualified medical and technical assistants responsible to him, and for whom he is responsible, to carry out accurately the various functions of the department.

2. Definitions

Radiology.—The branch of medicine which deals with the diagnostic and therapeutic application of radiant energy, including roentgen rays, radium, ultraviolet rays and other spectral radiation.

Department of Radiology.—A private laboratory or department of a hospital, clinic or other institution, organized and equipped for the diagnostic and therapeutic application of radiant energy, including roentgen rays, radium, ultraviolet rays and other spectral radiation.

Radiologist.—A qualified physician who also has obtained adequate special training and experience in general radiology.

Roentgenology.—The phase of radiology which deals with the diagnostic and therapeutic application of roentgen rays only.

Department of Roentgenology.—A private laboratory or department of a hospital, clinic or other institution organized and equipped for the diagnostic and therapeutic application of roentgen rays only. A department organized and equipped solely for the diagnostic or therapeutic application of roentgen rays shall be known as a department of diagnostic or therapeutic roentgenology, respectively.

Roentgenologist.—A qualified physician who has had adequate training and experience in the diagnostic and therapeutic application of roentgen rays.

Diagnostic Roentgenologist.—A roentgenologist who limits his practice to the diagnostic phase of roentgenology.

Therapeutic Roentgenologist.—A roentgenologist who limits his practice to the therapeutic phase of roentgenology.

Radium Specialist.—A physician who has had adequate training and experience in the therapeutic use of radium and who specializes in this work.

3. Scope

A department of radiology should be able to render all of the following services:

(*a*) Roentgenography, simple or stereoscopic, of any part of the body, with medical interpretation of the roentgenographic observations, and under satisfactory conditions for the protection of the patient and of the professional and technical personnel.

(*b*) Roentgenoscopy of any part of the body, in any position, with or without opaque mediums, with medical interpretation of the roentgenoscopic observations, and under satisfactory conditions for the protection of the patient and the professional and technical personnel.

(*c*) Roentgenotherapy of all benign and malignant diseases amenable to such treatment with roentgen rays generated at low, moderate or high voltage (long, medium or short wavelength), as the conditions may require, and under satisfactory conditions for the protection of the patient and of the professional and technical personnel.

(*d*) Radium therapy of all benign and malignant diseases amenable to such treatment with an adequate quantity of radium element or emanation, and under satisfactory conditions for the protection of the patient and of the professional and technical personnel.

Ultraviolet therapy, general or local, with satisfactory air-cooled and water-cooled quartz mercury lamps or carbon arc lamps, with suitable quartz and other applicators for irradiation of cavities, sinuses or the superficial lesions under pressure, and under satisfactory conditions for the protection of the patient and of the professional or technical personnel. This stipulation is not mandatory, but the Council recommends that every department of radiology be equipped for ultraviolet therapy or that the ultraviolet equipment of hospitals be placed in the department of radiology. Ultraviolet treatment by the department of physical therapy shall not be countenanced unless such department is under the control and supervision of a medical director who has specialized in radiology.

A department of roentgenology should be able to render the services specified under *a*, *b* and *c*.

A department of diagnostic roentgenology should be able to render the services specified under *a* and *b*.

A department of therapeutic roentgenology should be able to render the services specified under *c*.

A department of radium therapy should be able to render the services specified in *d*.

4. Housing

The housing should be adequate for the proper functioning of the department of radiology or roentgenology. Damp or ill ventilated quarters are unsuitable for such work.

5. Equipment

The equipment should be sufficient to carry out properly the technical procedures and activities of the department of radiology, roentgenology or radium therapy.

6. Protection

The arrangement of working rooms and conditions, and the construction of all apparatus shall be such as to provide adequate protection, both from electrical shock and from avoidable exposure to roentgen rays or radium, to patients, attendants and other persons in or near the department. The requirements in this respect are based on the recommendations adopted by the International Congress of Radiology, held at Stockholm, Sweden, in July, 1928, and approved by the American Roentgen Ray Society and the Radiological Society of North America.

7. Records

Full records of all examinations and treatments made by the department, suitably indexed, are essential. Roentgenograms made in the department should have inerasible identification marks which will preclude error as to patients concerned. Roentgenograms may be lent to referring physicians but should be returned to the laboratory for filing and future reference. Suitable storage facilities should be provided where roentgenograms and other records will be both safe and readily available for reference. They shall be kept as long as there is the possibility of their being needed for the benefit of the patients or their physicians.

As roentgenography constitutes only a kind of medical examination, on which the roentgenologist's opinion of the patient's condition is partly or wholly based, and as the opinion of the specialist is the essential factor, the Council holds that the introduction of roentgenograms as evidence in medicolegal cases should be discouraged as immaterial and as tending to adulterate the process of justice. There is no more reason for the introduction of roentgenograms than for requiring a pathologist to bring to court his microscope and his sections of tissues.

8. Reports

The reports of a department of radiology, roentgenology or radium therapy shall be made through the director on stationery or blanks having the name of the director printed thereon. Under no circumstances shall roentgenologic diagnoses, interpretations, opinions, statements of prognosis, or therapeutic suggestions be offered by the nonmedical personnel.

9. Library

The department of radiology, roentgenology or radium therapy should be provided with, or have convenient access to, a library including current scientific books and journals on all the various subjects required in its work.

10. Ethics, Fees and Publicity

Radiology is a special type of medical practice, and the physician practicing radiology is subject to the same rules of special training and conduct that govern his fellow specialists in the practice of medicine and surgery. The Principles of Medical Ethics of the American Medical Association shall

apply in all cases. The fees charged for radiologic services shall be under the control of the director of the department. All systems of rebates, discounts, special group rates, etc., shall be considered unethical, except that, where the patient's economic status is the determining factor, the radiologist, like his fellow physician in medicine or surgery, may waive part or all of the fee.

The publicity of a department of radiology, roentgenology or radium therapy should be in professional good taste and limited to statements of fact as to name, address and telephone number; names and titles of the director and other active responsible personnel; field of work covered, office hours, directions for referring patients, and so forth. It should not contain misleading statements or claims of unusual superiority. It should not advocate medical fads nor lay undue stress on the importance of roentgenologic observations. On the letterheads or any other form of publicity, only the names of those rendering regular services to the department should appear as being connected with the department. Advertising matter should be directed only to physicians, either through bulletins or through recognized technical journals, and never to the nonprofessional public, as, for example, by announcements in popular journals and periodicals, circulars, pamphlets or telephone lists.

11. ADMISSION TO THE APPROVED LIST

Only when the physician is the director or is affiliated with a department of radiology, roentgenology or radium therapy in which the personnel, space, equipment, management, finances and records are such as will insure honest, efficient and accurate work may he expect to be listed. Physicians desiring to be considered for the approved list should apply to the Council on Medical Education and Hospitals of the American Medical Association, 535 North Dearborn Street, Chicago.

REPORT OF THE COUNCIL ON SCIENTIFIC ASSEMBLY

To the Members of the House of Delegates of the American Medical Association:

The Council on Scientific Assembly has held its regular meetings during the past year and has given its careful consideration to all matters referred to it.

The regular annual conference with the secretaries of the sections of the Scientific Assembly was held in Chicago, Dec. 11, 1931.

PROPOSAL FOR THE CREATION OF NEW SECTIONS

At the Philadelphia Session a resolution submitted by Dr. Martin E. Rehfuss, delegate from the Section on Gastro-Enterology and Proctology, providing for the creation of two new sections was referred to the Council on Scientific Assembly. This resolution proposed the establishment of a Section on Gastro-Enterology and a Section on Proctology and the abolishment of the section now existing and known as the Section on Gastro-Enterology and Proctology. This resolution was considered by the Council at its regular annual meeting on Dec. 11, 1931, after proponents of the resolution had been heard. By a unanimous vote, the members of the Council decided to recommend to the House of Delegates that no new sections of the Scientific Assembly shall be created at this time.

CHANGE IN NAME OF SECTION ON DISEASES OF CHILDREN

The House of Delegates at the Philadelphia Session adopted the report of the Reference Committee on Sections and Section Work approving the resolution introduced by Dr. Isaac A. Abt, delegate from the Section on Diseases of Children, to the effect that the name of that section should be changed to "Section on Pediatrics." No action was taken by the House of Delegates to effect the necessary amendment to the By-Laws to carry out the proposed change. The Council recommends to the House of Delegates that, in accordance with the action taken by the House at the Philadelphia Session, section 1 of chapter XIV of the By-Laws be amended by substituting in the tenth line of that section for the words "6. Diseases of Children" the following: "6. Pediatrics."

ASSIGNMENTS FOR SECTION MEETINGS AT NEW ORLEANS SESSION

The meeting hours of the sections at the Eighty-Third Annual Session have been assigned as follows:

MORNING	AFTERNOON
Diseases of Children	Practice of Medicine
Surgery, General and Abdominal	Obstetrics, Gynecology and Abdominal Surgery
Ophthalmology	Laryngology, Otology and Rhinology
Pharmacology and Therapeutics	Pathology and Physiology
Nervous and Mental Diseases	Orthopedic Surgery
Dermatology and Syphilology	Urology
Gastro-Enterology and Proctology	Preventive and Industrial Medicine and Public Health
Radiology	

DR. L. H. MCKINNIE

Dr. Lewis H. McKinnie, a member of the Council on Scientific Assembly, died at his home in Colorado Springs, Nov. 2, 1931. Dr. McKinnie was made a member of the Council at the Portland Session in 1929 and was faithful and efficient in the performance of his duties. A resolution expressing the regard and esteem in which Dr. McKinnie was held by his fellow members and attesting to the high quality of the service rendered by him has been spread on the minutes of the Council.

Dr. Irvin Abell of Louisville, Ky., was appointed by the President of the Association to serve as a member of the Council on Scientific Assembly until the annual session in 1932.

Respectfully submitted.

JOHN E. LANE, Chairman.
FRANK H. LAHEY.
ROGER S. MORRIS.
IRVIN ABELL.
FRANK SMITHIES.
E. H. CARY, President-Elect.
MORRIS FISHBEIN, Editor, THE JOURNAL.
OLIN WEST, Secretary.
} Ex officio.

CLINICAL LECTURES TO BE GIVEN AT THE NEW ORLEANS SESSION

The clinical lecture program will be given in the Concert Hall at the Municipal Auditorium, located at Beauregard Square between St. Ann and St. Peter streets. There will be lectures on Monday afternoon, May 9, and on Tuesday morning and afternoon, May 10.

Topics to be discussed are of important practical interest to the rank and file of the profession, and the contributors to this program are well known and highly qualified in their respective fields of work. The motion picture on cancer will be presented both on Monday and on Tuesday afternoons.

This program will include the following lectures:

Drug Addiction—A World-Wide Problem.
P. WOLFF, Berlin, Germany

Drug Addiction in the United States.
WALTER L. TREADWAY, Washington, D. C.

Cancer of the Gastro-Intestinal Tract.
J. SHELTON HORSLEY, Richmond, Va.

The Changing Diet of the American People.
LAFAYETTE B. MENDEL, New Haven, Conn.

The Diagnosis of Early Pulmonary Tuberculosis.
LAWRASON BROWN, Saranac Lake, N. Y.

Disturbances of Peripheral Circulation.
ARTHUR W. ALLEN, Boston.

Appendicitis. H. A. ROYSTER, Raleigh, N. C.

Early Diagnosis of Poliomyelitis. LEWIS J. POLLOCK, Chicago

Use of Convalescent Serum in Poliomyelitis.
WILLIAM H. PARK, New York

Orthopedic Treatment of Poliomyelitis.
WILLIS C. CAMPBELL, Memphis, Tenn.

Motion Picture on Cancer.
FRANCIS CARTER WOOD, New York

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SATURDAY, APRIL 2, 1932

THE ANTIVIVISECTIONISTS' QUESTIONNAIRE

Physicians have begun to receive a questionnaire, now being circulated by the National Anti-Vivisection Society with a view to obtaining opinions that will be used to bolster the antivivisectionist cause. The circular letter which accompanies the questionnaire shrewdly insinuates that such economic depression as now affects physicians is largely due to "the natural indignation of all fair-minded people at the revolting cruelties to conscious, defenseless animals, especially to dogs." The letter also seems to be planned to incite physicians to opposition against organized medicine. Thus, it says:

> It is not fair that the great majority of physicians should see their practice and income decreasing as a result of cruelty which is repugnant to them, but which they appear to the general public to approve and support, because medical societies to which they belong officially defend such practices.

Notwithstanding the poor English in which this statement is couched, its purport is clear. Apparently physicians who have received the questionnaire are either ignoring it entirely, unqualifiedly condemning it, or attempting to answer the questions with qualifications.

During recent years, physicians have been subjected to a veritable deluge of questionnaires from all sorts of commercial, propagandistic or scientific sources. Those associated with hospitals particularly have spent many hours of time on the relatively thankless task of filling out these inquiries. Any one experienced in the compiling of questionnaires knows that it is possible, through shrewd phrasing of the questions and through an understanding of human nature, to develop the majority of replies with just about the answers one seeks to get. The questionnaire here considered fits quite perfectly into this category. Like the old question "Are you still beating your wife?" any answer that is given may be used against one.

The first question assumes the premise that animal experimentation is done for commercial profit, to satisfy scientific curiosity and to make demonstrations for students. Any answer to the justification or ethical character of this procedure might be susceptible of misquotation by the source from which the questionnaire issues. The next six questions, which inquire as to the personal belief of the physician in animal experimentation, serums and diagnostic tests, may, of course, easily be answered in the affirmative. However, the succeeding questions are planned to develop the idea that physicians in general are divided into opposing camps in their views as to the efficacy of vaccination in the prevention of smallpox and as to the value of antitoxins. Furthermore, the physician is asked to guarantee that all such methods are free from harmful after-effects. Knowing something of the anatomy and physiology of the human being, it would seem to be quite impossible to guarantee anything except that the antivivisectionists' cause will invariably resort to misrepresentation and to guile in its propaganda.

THE JOURNAL does not propose to urge on physicians either that they answer or that they do not answer the questionnaire. After all, physicians as men of judgment should be able on reading this questionnaire to make up their own minds as to whether or not they care to become involved in this situation. The answer of THE JOURNAL to all questions can be phrased simply: By the use of animal experimentation the world has been made more healthful and safer not only for human beings but also for the animals themselves. If occasionally a harmful result has occurred—and such accidents are rare indeed—the vast good that has been accomplished far outweighs any possible evil.

SIGNIFICANCE OF GASTRIC ACIDITY PRODUCED BY VARIOUS STIMULI

Tests of functional activity appeal to the clinician who is confronted with an uncertain diagnosis or who is anxious to evaluate the results of treatment. He desires objective data to correct or amplify his clinical impressions. Admirable examples of successful methods of measuring the function of organs are the Graham test as applied to the gallbladder and the urea or the creatinine ratio measurement of renal activity. These tests are not intended to disclose the cause of disease but to indicate whether function is normal or subnormal at the time the observations are made. Other functional tests are less satisfactory but in some cases are of distinct value in studying hepatic or cardiac conditions.

The study of gastric acidity is relatively old but until recently occupied an anomalous position among functional tests. It was not used to measure how much gastric function had been impaired by disease but to indicate what sort of disease was present. As a test, then, it differed from those which are not assumed to cast light on the cause but only on the extent of disease. Early students believed that peptic ulcers caused a high acid secretion, gallbladder disease a somewhat too low,

and cancer a very low acid response to a test meal. As this presumably occurred even with lesions too small to encroach on the secreting surface, it was taken for granted that disease produced reflex disturbances in the response of the mucosa to the food in the stomach. It was admitted that ulcer and cancer of the stomach might be almost identical in effect on digestion and in physical appearance and that in some cases only careful histologic examination could distinguish the character of the lesion, yet it was believed that one caused reflex hyperachlorhydria, the other hypochlorhydria. The fact that excision of such lesions, or the healing of an ulcer, did not alter the type of acid response to a meal was ignored. Naturally, the type of stimulus was considered important by those who believed that the secretory activity was determined by reflexes occurring as a result of certain lesions.

Further experience has shown that, regardless of the stimuli used to evoke secretion, the acidity is in the upper range of normal in most cases of peptic ulcer, and in the lower range in most cases of gastric cancer. Achylia is frequent in the latter condition and almost always present in addisonian anemia. Achlorhydria is observed in persons who are quite well and remain so for years,[1] and acid secretion, after stimuli of various kinds, may be as high in healthy persons as in any patient with peptic ulcer. Longer periods of study and some careful observations of gastric pathologic changes have brought conviction that the ranges of secretion "characteristic" of ulcer, cancer and primary anemia are not due to reflex action of the lesions but precede the diseases by many years and usually persist indefinitely after the lesions of ulcer or cancer have been eradicated or the primary anemia controlled by medication. So far as gallbladder lesions are concerned, the evidence that secretion is altered by active lesions and normal after effective treatment is far from convincing.

The significance of gastric secretory changes is thus seen to lie not in demonstrating the effect of the lesion on function, as in renal function tests, for example, but in indicating the kind of soil on which the disease has developed.[2] The test is of diagnostic value precisely because it does indicate that conditions favorable to the occurrence of ulcer, cancer or primary anemia are and probably for a long time have been present.[3] In the cases of ulcer and cancer, rare exceptions do occur.

This growth of knowledge of the variation of gastric function in disease is not yet reflected in the accepted methods of testing the secretory power of the mucosa. The theory of "reflexes" and the notion of "physiologic stimuli" still linger. Why gruel or toast or wheat biscuits, which entered the dietary of a small proportion of mankind only a few generations ago, should be regarded as "physiologic stimuli" is not quite clear. Yet the number of clinics using routine injections of histamine to provoke a maximal secretory response is relatively small, and the upholders of the various test meals are insistent in their preference for the older method. They admit that about half the cases that do not yield free acid when a meal is given do yield low or "normal" values when histamine is given. They admit that histamine produces a clear juice, free from débris and buffering substances which lower the acidity, and that, by and large, it produces a much more acid juice than any test meal.[4] Although in a few cases, tested once with each method, higher values have been obtained with test meals than with histamine, these must be regarded as the errors inherent in any test in which juice has to be aspirated from an open sac into which alkali may regurgitate from the duodenum or be admitted constantly from the salivary secretion that is swallowed. On one test more alkali may enter than on another, but no one has reported an instance of regular response to a test meal with more acid juice than evoked by histamine. Histamine is apparently the simplest, cleanest and most effective stimulus for gastric secretion. More recently it has been proposed that a combination of histamine injections with a gastric stimulant such as alcohol would be more effective, but this suggestion was based on the erroneous idea that some patients respond to a meal or to alcohol and not to histamine. The acid values obtained with such a test are lower than with histamine alone.[5]

One other clinical point deserves mention; namely, that it is not certain that maximal secretory power is more significant as indicating the type of mucosa on which peptic ulcer may develop than is the basal, or fasting, secretion. The importance attached by older clinicians to aspiration of fasting content in the early hours of the morning is evidence that this "peptic ulcer type" of secretion may be distinguished from the normal more clearly when no stimulus is given. Of course, this is not a valid excuse for using a stimulus which is neither maximal nor minimal and which, by its buffer content, masks the actual acid secretion.

A generation after Harvey's demonstration of the circulation, Sydenham advised that the venesection for hydrothorax be done from the arm on the same side. This had been the hippocratic procedure, and his experience taught him that it was successful. Many clinicians accustomed to gruel or bread as gastric stimuli will no doubt continue to use these procedures. Some have, indeed, published reports which substantiate the belief that such meals are adequate to differentiate the types of gastric acidity.[6] However, it seems probable that the convenience and accuracy of a test which can be done without the assistance of a cook and which gives maxi-

1. Unexplained Anacidities, Current Comment, J. A. M. A. **98**: 485 (Feb. 6) 1932.
2. Apperly, F. L., and Norris, J. H.: The Familial Influence in Gastric Function, Brit. M. J. **1**: 255 (Feb. 14) 1931.
3. Hurst, A. F.: On the Precursors of Carcinoma of the Stomach, Lancet **2**: 1022 (Nov. 16) 1929.
4. Comfort, M. W., and Osterberg, A. E.: Gastric Secretion After Stimulation with Histamine, J. A. M. A. **97**: 141 (Oct. 17) 1931.
5. Lerman, Jacob; Pierce, F. D., and Brogan, A. J.: Gastric Acidity in Normal Individuals, J. Clin. Investigation **11**: 155 (Jan.) 1932.
6. Comfort and Osterberg (footnote 4). Gammon, G. D., and Miller, T. G.: Gastric Secretion After Histamine: Its Evaluation as a Quantitative Test in Digestive Disorders, J. Clin. Investigation **10**: 755 (Oct.) 1931.

mal acid values will commend itself more and more to those who are now learning the significance of variations in the type of gastric secretion. The use of "meals" as stimuli suggests that the physician still clings subconsciously to the old theory that the response to a meal is conditioned by the kind of lesion present, a concept now as thoroughly disproved as Galen's vascular mechanics.

NUTRITIONAL EDEMA

Conditions developed through the exigencies of the World War were responsible for a number of pathologic manifestations in man, among them so-called war dropsy, or famine edema. The earlier observers of this disorder were inclined to regard it as a vitamin deficiency disease. This seemed justified because the edema was sometimes associated with a recognized symptom of a specific avitaminosis, xerophthalmia. Obviously, in periods of deprivation of food in its usual abundance a shortage of a number of dietary essentials is threatened. It is not always easy, therefore, to fasten responsibility for resulting disorders on lack of individual components of the regimen. After the war it became evident that the famine edema was not due to scurvy. Thus one type of avitaminosis that has been associated with the hardships of war in earlier times was excluded. Presently experimental evidence, secured in the nutrition laboratories, tended to divert attention away from the possible shortage of vitamins as a direct cause of characteristic war dropsy and focus consideration on the concurrent poverty in protein and energy in the diet of the victims.

Thus has been established a conception of a type of nutritional edema in which there is demonstrable reduction in the content of protein in the blood serum. Diets poor in protein, but otherwise salutary, tend to develop manifestations of edema. Furthermore, it has been demonstrated that in many cases of edema not primarily of cardiac or renal origin the content of serum protein may be unexpectedly low. In nutritional edema the lowered serum protein content is brought about by dietary rather than systemic conditions. Relief comes, in such otherwise uncomplicated cases, by supplementing the diet with protein. According to observations on patients [1] in the Peiping Union Medical College in China, proteins of animal origin are superior to those from the usual plant sources in building up plasma proteins and reducing the edema.

Investigators who have attempted to induce edema in animals by rendering them hypoproteinemic have sometimes had difficulty in developing the characteristic symptom. This has recently been explained [2] on the basis of the relation of chloride retention to the water balance and edema formation. The latter is promoted by increasing the sodium chloride intake and water intake of the animals. According to Fahr and his co-workers [2] at the University of Minnesota Medical School, Minneapolis, lowering plasma proteins to below 3 per cent and osmotic pressure of plasma colloids to below 10 mm. produces a tendency to edema formation. The edema is slight and does not increase rapidly until sodium chloride is given, when the urinary output falls suddenly and massive edema appears. This is in harmony with the clinical experience that it is sometimes possible to rid a patient with nephrosis or with nephritis of visible edema by the deprivation of salt. When even moderate quantities of salt are ingested, visible edema may appear in from twenty-four to forty-eight hours. There is a close correlation between edema formation and reduction of the colloid osmotic pressure in these cases consequent on loss of protein from the blood plasma.

1. Liu, S. H.; Chu, H. I.; Wang, S. H., and Chung, H. L.: Nutritional Edema: I. Effect of Level and Quality of Protein Intake on Nitrogen Balance, Plasma Proteins and Edema, Proc. Soc. Exper. Biol. & Med. **29**: 250 (Dec.) 1931. Liu, S. H.; Chu, H. I.; Li, R. C., and Fan, C.: Nutritional Edema: II. Effect of Alkali and Acids on Nitrogen Balance, Plasma Proteins and Edema, ibid., p. 252.

2. Lepore, M. J.: Experimental Edema Produced by Plasma Protein Depletion, Proc. Soc. Exper. Biol. & Med. **29**: 318 (Dec.) 1931. Fahr, G.; Kerkhof, A., and Giere, E.: Salt as a Factor in Edema Formation Following Plasmaphoresis, ibid., p. 335.

Current Comment

A SUGGESTED TREATMENT FOR THE DEPRESSION

It is interesting in the period of financial depression that now confronts us to consider some of the extraordinary therapies suggested by various observers. In Germany the suggestion has recently been made that the government devise some plan for officially removing the gold from the teeth of the dead. It has been estimated by a competent German economist and investigator that dental gold worth 11,300,000 marks, or approximately $3,000,000, was buried with the bodies of 805,973 persons who died in Germany during the year 1929. Most of the gold used is 21 carat gold. The suggestion is not new, but Hoffmann has worked out a technic for recording installation and for control of extraction of the gold. Approximately 25 per cent of the value of the gold recovered would be applied to the cost of recovering it. It is perhaps difficult to consider this suggestion seriously. Somehow there rings in the ears the famous cry of the prospector, "Thar's gold in them hills!" But it is conceivable that the progress of civilization may lead eventually to effective and economic utilization of many other types of mineral and financial resources now wasted.

ALLANTOIN IN HUMAN URINE

The well defined chemical compound allantoin has long been known to students of biologic chemistry. It is a characteristic constituent of the allantoic fluid, from which it derived its name; it is found also in the fetal urine of certain animals and in the amniotic fluid. For many years allantoin has been recognized as an end-product of the metabolism of purine substances in various species. In the case of man and a few of the primates the ingestion of nucleic acids or other purine-yielding compounds results in a correspondingly

increased output of uric acid. In other mammals, however, the end-product is predominantly allantoin, which has usually been recorded as absent from the human urine. One difficulty in making detailed investigations of the distribution of allantoin has been attributable to the lack of suitable biochemical methods for the isolation or measurement of small quantities such as might occur normally in tissues or fluids. More than twenty years ago the occurrence of minute amounts of allantoin in human urine was reported by capable investigators. Recent students [1] of the problem have developed more accurate methods for the determination of the compound. By such procedures it is found that specimens of mixed human urines yield from 25 to 30 mg. of allantoin per liter. This is equivalent to about one thirtieth of the average daily output of uric acid by the kidneys of man. Whether this small fraction represents a reexcretion of allantoin actually ingested as such or the effect of a slight conversion of purines beyond the stage of uric acid remains to be learned. In any event, the quantities involved in human urine are too small to possess any noteworthy physiologic significance. Allantoin in this fluid may probably be classed along with traces of other substances, such as dextrose and other carbohydrates, that may be detected only when sufficiently delicate tests are applied.

1. Larson, H. W.: A Colorimetric Method for the Determination of Allantoin, J. Biol. Chem. **94**: 727 (Jan.) 1932. Fosse, R.; Brunel, A., and Thomas, P. E.: Compt. rend. Acad. d. sc. **192**: 1619, 1931.

THE LYMPHATICS OF THE THYROID

The significance of so-called adolescent goiter and its reputed relation to food and drink have become frequent topics of discussion. Enlargement of the thyroid obtrudes itself on the most casual visual observation, so that it cannot well be overlooked by even untutored persons. It is surprising, therefore, that some of the most significant aspects of this organ remain undiscovered, if not actually unexplored. The peculiarity that the thyroid, though contributing products of its own synthesis to the rest of the body, is a "ductless" gland has raised the question as to how the potent hormone finds egress from the site of its formation. As in the case of other endocrine structures, two pathways are suggested: one by way of the blood stream, the other through the lymph channels. Rienhoff [1] remarks that there is now a general agreement on the fact that the external surface of the thyroid is covered by a rich anastomosing plexus of lymphatic vessels and on the course of the larger extraglandular collecting trunks that drain the plexus. However, the relation of the lymphatic capillaries to the definitive histologic unit of the thyroid, i. e., the follicle, and the intraglandular pattern of the lymphatic system of this gland are the main controversial points which up to the present have remained, as he states, undisclosed. The seeming abundance of lymphatic paths has led some writers to infer that they afford the opportunity for the discharge of thyroid hormone after it leaves the follicles. Rienhoff's researches at Johns Hopkins University indicate that the lymphatic system of the thyroid is a closed one. In these anatomic studies it appears that the blood capillaries form a complete network about each follicle with the epithelial cells resting directly on the endothelial wall of the capillary. The blood capillaries in general run parallel to one another from the vessel of ingress to that of egress. The lymphatic capillaries form a much more coarse and less intimate plexus in regard to the follicles, being situated entirely outside the blood capillary plexus. Individual follicles were nowhere observed to be served with a specific lymphatic reticulum or in direct contact with either the lymphatic capillaries or the bursellae. The lymphatic plexus occupied the intervals between the parenchymatous elements and, from the apparent structure of this system, would serve to drain off the accumulation of nonspecific tissue juices. Rienhoff therefore regards it unlikely, from a purely structural standpoint, that the specific secretion or hormone of the thyroid is transmitted by the lymphatic system.

1. Rienhoff, W. F., Jr.: The Lymphatic Vessels of the Thyroid Gland in the Dog and in Man, Arch. Surg. **23**: 783 (Nov.) 1931.

LIMITATIONS OF BACTERIOPHAGE THERAPY

The initial assumption that "bacteriophage" may function as a specific internal antiseptic if introduced into infected tissues must be revised if one is to credit the recently alleged inactivation of bacteriophage by normal plasma and normal tissue cells, and its alleged cooperation with certain bacteria to produce micro-organisms of exalted activity. Bacteriophage is inactive under certain colloidal conditions. Nearly a decade ago, for example, it was shown that its lytic action is abolished in the presence of egg white, gelatin and certain gums.[1] Drs. Dresel and Lewis [2] of the department of filtrable viruses at Johns Hopkins University now point out that bacteriophage is also without demonstrable bactericidal action in artificial tissue cultures. The plasma apparently inhibits both lytic action and proliferation. In such a lytically inactive bacteriophage-plasma mixture, however, the bacteriophage is not destroyed and can be recovered with but slight deterioration by appropriate plating methods. Nearly ten years ago, Friedberger and Vallen [3] called attention to the second phenomenon, which has been amply confirmed by subsequent investigators.[4] They showed, for example, that while in themselves Bacillus typhosus and the corresponding bacteriophage are each nonhemolytic for certain erythrocytes, under certain test tube conditions microorganisms and bacteriophage conjugate or otherwise cooperate to form a hemolytic bacteriophage-bacterium mixture or mutant. Sonnenschein [5] subsequently named the resulting bacteriophage-exalted typhoid bacillus Bacterium typhi-haemolyticum. That this is not a purely artificial test tube phenomenon is shown by the fact that the hemolytic B. typhosus can be cultivated from typhoid stools [3] and from typhoid bloods.[6] The hemolytic mutant thus cultivated is

1. Handurog, P.: Compt.-rend. Soc. de biol. **90**, 1924.
2. Dresel, Irmgard; and Lewis, Margaret R.: Am. J. Hyg. **11**: 189 (Jan.) 1930.
3. Friedberger, E., and Vallen, J.: Klin. Wchnschr. **2**: 1649 (Aug. 27) 1923.
4. Klieneberger, E.: Centralbl. f. Bakt., part 1, **117**: 344 (July 11) 1930.
5. Sonnenschein, C.: Centralbl. f. Bakt., part 1, **111**: 177, 1928.
6. Bianchi, L., and Callerio, C.: Ztschr. f. Immunitätsforch. **72**: 155 (Sept.) 1931.

allegedly resistant to bacteriophage lysis. Similar reinforced bacteriophage mutants have been demonstrated for the cholera vibrio and for colon, paratyphosus and dysentery bacilli.[4]

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Monday from 12 noon to 12:05 p. m. over Station WBBM (770 kilocycles, or 389.4 meters) and other stations of the Columbia Broadcasting System, and on Wednesday and Friday from 2:25 to 2:30 p. m. over Station WBBM, Chicago.

The program for the week is as follows:

April 4. What About Diphtheria?
April 6. Have I Good Eyes?
April 8. Economical Lunches.

There is also a fifteen minute health talk sponsored by the Association on Saturday from 11:15 to 11:30 a. m. over Station WBBM, Chicago.

The program for the week is as follows:

April 9. Cancer and Women's Clubs.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

Clinical Society Holds Meeting.—The Fort Smith Clinical Society, Fort Smith, held its fourth meeting, March 22. The program included an operative clinic, dry clinics and presentation of cases, and symposiums on kidney infections, diseases of the chest and diabetes. Papers were presented at the afternoon session by Dr. Arthur F. Hoge, Fort Smith, on "Head Injuries," and by Dr. Richmond McKinney, professor of otology, laryngology and rhinology, University of Tennessee School of Medicine, Memphis, on "A General Consideration of Broncho-Esophagoscopy."

CALIFORNIA

Begins Serving Sentence. — William Ivanhoe Kinsley, M.D., started serving his three year sentence, January 2, for violation of the state poison act, according to the San Diego *Sun*, as noted in *California and Western Medicine*. Following his conviction of illegally dispensing narcotics several months ago, Dr. Kinsley appealed. The appellate court recently upheld the conviction. Dr. Kinsley's license to practice medicine in the state had been revoked in 1931 on charges of narcotic dereliction and illegal operation (THE JOURNAL, July 25, 1931, p. 253).

Measles in Contra Costa County.—During the last three weeks of February, about 200 cases of measles occurred in the eastern part of Contra Costa County. Three deaths from pneumonia following measles occurred among preschool children, and the school trustees closed the schools for a short time, without the sanction of the county health department. It was found that the health department's efficiency in tracing cases was greatly lowered when the schools were not in session. The experience in Contra Costa County emphasizes the importance, the bulletin states, of keeping schools open when epidemic diseases are prevalent.

Society News.—A symposium on essential hypertension was conducted before the Symposium Society, March 30, in Los Angeles, by Drs. Roy E. Thomas, Howard F. West and Edward Richmond Ware. Dr. Kenneth E. Smiley talked on "Repair of Hernias with Fascial Sutures."——The Hollywood Academy of Medicine, meeting jointly with the urologic section of the Los Angeles County Medical Association, was addressed by Dr. Theodore M. Davis, Greenville, S. C., on "Davis Method of Prostatic Resection."——Dr. Carl W. Rand addressed the Los Angeles Society of Neurology and Psychiatry, March 23, on "Rôle of the X-Rays in the Treatment of Pituitary Tumors."——At the meeting of the Los Angeles Clinical and Pathological Society, March 24, Dr. Max Pinner, Tucson, Ariz., among others, spoke on "Filtrable Forms of the Tubercle Bacillus."

Semiannual Meeting of Medical Association. — The eighty-sixth semiannual meeting of the Southern California Medical Association will be held at the Hotel Samarkand, Santa Barbara, April 15-16. Guest speakers will include Drs. George B. Eusterman, Rochester, Minn., on "Benign Mimicry of Carcinomatous Gastric Lesions, with Notes on Differential Diagnosis"; William Darrach, dean emeritus and professor of clinical surgery, Columbia University College of Physicians and Surgeons, New York, "Inferior Radio-Ulnar Articulation," and Louis Faugeres Bishop, New York, "The Practice of Cardiology." Other speakers will include Drs. Rexwald Brown, Santa Barbara, "Medical Economics"; Robert V. Day, Los Angeles, "Endoscopic Prostatic Repair," and Arthur B. Smith and Edward F. F. Copp, La Jolla, "Relation of Functional Disturbances of the Gallbladder to Thyroid Therapy." A banquet will be held at the hotel Saturday and there will be a golf tournament Sunday at the La Cumbre Golf Club.

Regulations for Control of Psittacosis.—The California Board of Public Health has adopted regulations for the control of psittacosis among birds of the parrot family and love birds. All individuals, firms or corporations engaged in the breeding, exchanging, buying or selling of any of the birds designated shall be registered annually with the state board of health. No fee will be charged for this registration. Records shall be kept available for official inspection, containing the dates of purchases, sales, exchanges or gifts of the birds; the names and addresses of all parties to the transactions, and a description of the birds. Records of all cases of sickness and death among the birds, including the signs and symptoms of each case, shall be kept on file for at least two years and as much longer as may be required by the health officer. Places of confinement shall be so constructed that they may be cleansed and disinfected in accordance with instructions issued by the health officer. Newly acquired birds shall be isolated for thirty days in an area apart from other places of confinement. If sickness appears among these birds within the required isolation period, all of the isolated birds in contact with the sick birds shall be either destroyed or kept in continued isolation for an additional period of thirty days from the last case of illness in the group.

DELAWARE

Personal. — Dr. John B. Derrickson, Frederica, has been appointed director of the Sussex County Health Unit, with headquarters at Georgetown. Dr. Derrickson, who has practiced medicine in Frederica for thirty-two years, was president of the Delaware State Medical Society in 1926.

County Society Program. — An announcement from the New Castle County Medical Society, Wilmington, lists programs of the society for the year as follows: April 19, J. Paul Wintrup, D.D.S., Wilmington, "Oral Lesions Requiring Surgery"; May 17, Dr. Thomas Klein, Philadelphia, "Cancer of the Stomach"; June 21, annual outing; September 20, Dr. Owen J. Toland, Philadelphia, "Prophylactic Obstetrics," and Lovett Dewees, Ardmore, "Technic of Contraception"; October 18, Dr. Thomas Turner Thomas, Philadelphia, "Fractures"; November 15, Drs. William D. Stroud and Thomas M. McMillan, Philadelphia, "Rheumatic Fever and Heart Disease," and, December 20, the annual meeting. Dr. Paul N. Jepson, Philadelphia, addressed the society, March 15, on "Arthritis of the Spine."

DISTRICT OF COLUMBIA

Society News.—Dr. Charles Stanley White addressed the Medical Society of the District of Columbia, March 23, on "Riedel's Struma." The society was addressed, March 16, by Dr. John Alexander, Ann Arbor, Mich., on "Surgery as an Aid in the Management of Pulmonary Tuberculosis."

District Bills in Congress.—S. 1307 has passed the Senate, authorizing $50,000 for the alteration and repair of the present buildings of the Eastern Dispensary and Casualty Hospital in the District of Columbia and for retiring the existing indebtedness on such buildings. S. 1769 has been favorably reported to the House, without amendment, authorizing pay patients to be admitted to the contagious disease ward of the Gallinger Municipal Hospital (House Report 709).

ILLINOIS

Society News.—Dr. Frank M. Phifer, Chicago, addressed the Will-Grundy County Medical Society at Joliet, March 30, on "Phases of the Prostatic Problem."——The Iroquois County Medical Society was addressed, March 31, by Dr. Jacob D. Willems, Chicago, on "Early and Late Treatment of Deep Burns."

No Maternal Deaths in Decatur.—The city health officer of Decatur, Dr. Charles Raimer Smith, reports that no maternal death from any complication of childbirth occurred in that city in 1931, although 1,133 births were reported, of which 724 took place in the two general hospitals. Dr. Nordahl O. Gunderson, health commissioner of Rockford, reports that no death from puerperal septicemia occurred in that city during the year, although there were six maternal deaths from other complications of childbirth. There were 1,409 births reported from Rockford, of which 1,129 occurred in hospitals.

Chicago

Personal.—Albert B. Hastings, Ph.D., has been given a concurrent appointment as professor of physiology in the department of physiology, Division of Biological Sciences, University of Chicago, in addition to his professorship of biochemistry in the department of medicine.

Lewis Linn McArthur Lecture.—Dr. George L. Streeter, Baltimore, who is associated with the department of embryology, Carnegie Institution of Washington, will deliver the eighth Lewis Linn McArthur Lecture of the Frank Billings Foundation of the Institute of Medicine of Chicago, April 22. His subject will be "The Importance of Quality in the Egg."

Society News.—The Chicago Surgical Society was addressed, April 1, among others, by Drs. Waltman Walters, Rochester, Minn., on "Problems in the Treatment of Obstructive Lesions of the Common Bile Duct."——Dr. Hedwig S. Kuhn, Hammond, Ind., talked on "Early Treatment of Strabismus" and "The Phorias and Their Treatment" before the Chicago Council of Medical Women," April 1. Dr. Agnes Beulah Cushman spoke on "Cataract Work in India in 1932."——The Chicago Laryngological and Otological Society will be addressed, April 4, by Dr. Max Cutler on "Indications and Limitations of Radiotherapy in Cancer of the Tonsil, Nasopharynx and Larynx"; Dr. Austin A. Hayden will give a moving picture demonstration of "Management of Acute Mastoiditis."——A clinical program will be presented before the Chicago Orthopedic Club, April 8.

INDIANA

Fifty Years in Practice.—At a dinner meeting, March 1, the Muncie Academy of Medicine honored three physicians who have engaged in the practice of medicine fifty years. The physicians are Drs. Isaac N. Trent, Frank G. Jackson and William A. Spurgeon. Dr. Jackson has completed fifty years in practice, while the other two physicians have practiced fifty-two years. Dr. Harry E. Mock, Chicago, nephew of Dr. Jackson, addressed the meeting on "Fifty Years in Medicine." The guests of honor have all been residents of Muncie for many years, Dr. Trent settling there in 1889, Dr. Jackson in 1888, and Dr. Spurgeon in 1880.

Seminar for State Physicians.—A clinic and seminar for Indiana physicians was held by the Indiana University School of Medicine, March 25. The speakers, all from the Mayo Clinic, Rochester, Minn., were Drs. Arlie Ray Barnes, who is in charge of the division of cardiology; Harold Foster Dunlap, of the division of internal medicine; Byrl Raymond Kirklin, head of the roentgen department, and Frank Charles Mann, head of the experimental laboratories in general charge of instruction in all scientific work. All four men are graduates of Indiana University School of Medicine. The university has been conducting these clinics and seminars for several years in cooperation with the joint committee of the James Whitcomb Riley Hospital for Children, Indianapolis. A nursing seminar was held in the university, March 18. The program included demonstrations in nursing procedure and occupational therapy. Dr. George J. Garceau lectured on "The Care of the Feet."

Society News.—Dr. William Mithoefer, Cincinnati, addressed the Wayne-Union County Medical Society at Richmond, March 10, on "Nasal Accessory Sinuses and the General Practitioner."——The Tri-County Medical Society was addressed, March 9, at North Vernon by Dr. James H. Stygall and Harry G. Mayer, D.D.S., Indianapolis, on "Diagnosis of Pulmonary Tuberculosis" and "Care of the Teeth," respectively.——At the meeting of the Wells County Medical Society, Bluffton, March 8, Dr. Beaumont S. Cornell, Fort Wayne, spoke on hypertension.——Dr. Leander A. Malone, Terre Haute, addressed the Vigo County Medical Society, March 8, on "Cystic Disease of the Carpal Bones."——The Elkhart County Medical Association was addressed, March 3, at Elkhart, by Dr. Julius R. Yung, Terre Haute, on "Goiter and Parathyroid Injuries."——Dr. Frank W. Cregor, Indianapolis, talked on "The Professional Perspective of Syphilis" before the Ripley-Decatur Bi-County Medical Society, March 9.

IOWA

Physicians Honored.—The Calhoun County Medical Society recently gave a dinner in honor of Drs. Daniel J. Townsend and John W. Craig in celebration of their fifty years in the practice of medicine in Lohrville. The society also presented the two physicians with a pen and desk set each.

Course in Otology.—Prof. Erich Ruttin, Vienna, will conduct a study group in otology at Hotel Savery, Des Moines, April 4-9. The fee will be $50. The class will be limited to twenty. Further information may be had from Dr. Charles L. Chambers, 903 Equitable Building, Des Moines, who is managing local arrangements of the extension work.

Conference on Child Health.—The Iowa Conference on Child Health will be held in Des Moines, April 14-15, at the Hotel Fort Des Moines, with the opening address by Gov. Dan Turner. Dr. Samuel J. Crumbine of the American Child Health Association, New York, will give the principal address, April 14, on "The Business of Living." Other speakers will include Drs. Everett D. Plass, Iowa City, "A Study of Maternal and Neonatal Mortality in Iowa"; Roland W. Stahr, Fort Dodge, "Study of Childhood Morbidity and Mortality in Iowa"; Philip C. Jeans, Iowa City, "Study of Infant and Childhood Nutrition in Iowa"; John C. McKitterick, Burlington, "Study of the Control of Contagious Diseases in Iowa"; Julian D. Boyd, Iowa City, "Study of Tuberculosis in Children"; Dennis H. Kelly, Des Moines, "Study of Rheumatism in Children"; W. Eugene Wolcott, Des Moines, "Physically Handicapped Children"; Mark L. Floyd, Iowa City, "Chronic Nonspecific Lung Infections in Children"; Helen Johnston, Des Moines, "School Health Programs," and Miss Maude Sutton, R.N., "Instruction in Obstetrics and Pediatrics in Nurse Training Schools in Iowa." Dr. Daniel C. Steelsmith, Des Moines, will give a summary of the conference as a whole. Dr. Edward H. Cary, Dallas, Texas, President-Elect, American Medical Association, will address the banquet, Thursday evening, on "Child Health and Protection from a Doctor's Point of View," and Frank N. Freeman, Ph.D., professor of educational psychology, University of Chicago, will speak on "Child Health and Protection from the Educator's Point of View."

LOUISIANA

State Meeting Plans Changed.—The annual meeting of the Louisiana State Medical Society, which was to have been held in Lake Charles, was called off in view of the meeting of the American Medical Association in New Orleans. The state society will hold a business meeting at the time of the meeting of the American Medical Association. The house of delegates will meet, May 9 and May 10.

Society News.—Dr. Charles A. Bahn, New Orleans, was elected president of the New Orleans Ophthalmological and Otolaryngological Society, January 21, and Dr. Monte F. Meyer was reelected secretary. Dr. Bahn has recently been appointed professor of ophthalmology in the graduate department of Louisiana State University Medical Center.——Dr. Irving W. Potter, Buffalo, N. Y., addressed a joint meeting of the New Orleans Gynecological and Obstetrical Society and the Orleans Parish Medical Society, March 28, on the technic of elective version and extraction together with the immediate repairs of birth canal injuries.

MARYLAND

Birth Rate Lowest on Record.—The most striking changes in the health record for Maryland for 1931, in comparison with former years, were the decrease in the number of reported births and the increase in the number of cases of reported communicable diseases, the bulletin of the state health department notes. The birth rate for the state was 17.6 per thousand of population, the lowest on record, as compared with 18.5 in 1930. There were 213 fewer deaths in Maryland in 1931 than in 1930. The death rate for both years was 13.2 per thousand of population, the lowest rate Maryland has had.

The rate for typhoid, 5.4 per hundred thousand of population, was next to the lowest on record, that for 1929 having been 4.2. Diphtheria caused eleven more deaths than in 1930, giving a rate of 4.0 in comparison with 3.4, but the rate for this disease has not been lower in any other year. The rate for tuberculosis (95.7 per hundred thousand of population) has never been lower. The decrease in the total number of deaths in 1931 in comparison with 1930 occurred largely in diseases of the nervous system and of the genito-urinary system. There was a marked decrease in the number of deaths from acute and chronic nephritis, which had the lowest death rate since 1924. The puerperal death rate increased from 5.5 per thousand live births in 1930 to 6.0 in 1931 for the state. The increase occurred entirely in Baltimore, as there were seven fewer deaths in the counties than in 1930. The mortality rate was 5.5 per thousand live births for white mothers in the state and 8.1 for colored. Forty-one per cent of all the maternal deaths were ascribed to accidents, and 32 per cent to puerperal septicemia.

MASSACHUSETTS

Course in Human Relations at Tufts.—A course in human relations is now in progress at Tufts Medical School under the direction of Miss Elizabeth P. Rice, director of social service at the Boston Dispensary. The course consists of six lectures for the first year class at weekly intervals, following which twenty members were to be selected for field study at the dispensary. Dr. Albert Warren Stearns, dean, outlining the purpose of the course at its first meeting, February 4, emphasized the importance in medical treatment of environmental factors. An attempt is made to give the student a concept of the human being from the standpoint of the social factors in his daily life, rather than a discussion of disease entities. The aim is to encourage the student to maintain an open mind with respect to the person he is studying in order that he will not lose himself entirely in the search for disease. Other topics discussed include the organization of society and the history of the family as a social institution; problems of the immigrant family; the community and its relation to the family and the individual; responsibility of society for community life, social movements, labor problems and international relations; the normal person socially unadjusted, and the normal person mentally unadjusted. The twenty students selected for field work will be assigned to the Boston Dispensary, where they will have an opportunity to gain insight as to the methods, problems and purposes of social work.

MICHIGAN

The Care of Indigents.—The public relations committee of the Kent County Medical Society is making a survey of the medical care of indigents in Grand Rapids. According to Dr. Frederick C. Warnshuis, a plan for matched services will be proposed, thereby inducing the community to assume its share and relieving the medical profession from carrying the entire burden without remuneration. Saginaw County Medical Society has contracted to render medical care for indigent patients with contagious diseases.

Dr. Marshall Honored.—Dr. William H. Marshall was honored at a birthday dinner, March 23, given by members of the Flint and Genesee county medical societies and friends and colleagues throughout the state and Ontario. The speakers included Drs. Jabez H. Elliott, Toronto; Carl F. Moll, Flint, president of the state medical society; Leon M. Bogart, Flint; James E. Davis, professor of pathology, Detroit College of Medicine and Surgery; Archie C. MacKinnon, Atlanta, in whose army unit Dr. Marshall served during the World War, and W. B. Smith, honorary member of the Genesee County Medical Society. At the close of the meeting, Dr. Marshall presented Dr. Elliott with a set of the "Medical History of Michigan." These volumes will be added to the medical library at the University of Toronto.

Society News.—The program of the Washtenaw County Medical Society, Ann Arbor, March 24, included talks by Drs. Nelson L. Hersey on "Carcinoma of the Prostate, Variations in Bone Metastases"; Carl D. Benninghoven, "Pulmonary Chondroma," and Palmer E. Wigby, "Gastric Ulcer and Its Response to Medical Treatment."——Dr. Frederick C. Warnshuis, Grand Rapids, recently addressed the Ottawa and Kent county medical societies and the Northern Michigan Medical Society on "Trends of Social Medicine."——Dr. Charles G. Jennings, Detroit, addressed the St. Clair Medical Society, Port Huron, March 15, on "The Hypertensive Patient," and Dr. Louis J. Hirschman, Detroit, spoke on "What the General Practitioner Should Know About Rectal Diseases."——The Oakland County Medical Society was addressed, March 17, in Pontiac by Drs. Harold L. Morris and Harther L. Keim, Detroit, on "Renal Ptosis and Infection" and "Treatment of Syphilis," respectively.

MISSISSIPPI

Bill Introduced.—H. 501 proposes to require all state attorneys, sheriffs, and police departments to fingerprint all criminals and other persons coming in their custody. Such officials are to be required to forward the fingerprints taken to a commission appointed by the governor for classification and identification purposes.

NEBRASKA

Society News.—The Cuming County Medical Society has become affiliated with the Madison Five Counties Medical Society, which will hereafter be known as the Madison Six Counties Medical Society. Dr. Ray M. Balyeat, Oklahoma City, addressed the society at Norfolk, February 9, on "Allergic Diseases: Diagnosis and Treatment."——Drs. Herbert H. Davis and Lloyd O. Hoffman, Omaha, addressed the Cass County Medical Society, Weeping Water, in February, on tumors of the breast and present-day obstetrics, respectively.——Drs. Abram E. Bennett and Frank M. Conlin addressed the Omaha-Douglas County Medical Society, March 8, on neurologic problems in traumatic cerebral lesions and complications in diabetes, respectively.

NEW JERSEY

Health at Trenton.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended March 19, indicate that the highest mortality rate (24) appears for Trenton, and the rate for the group of cities as a whole, 13.9. The mortality rate for Trenton for the corresponding week of 1931 was 14.7, and for the group of cities, 13.5. The annual rate for eighty-five cities was 12.5 for the eleven weeks of 1932, as against a rate of 14.1 for the corresponding period of last year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have large Negro populations may tend to increase the death rate.

NEW YORK

Campaign for Adequate Maternity Care.—A pamphlet outlining the fundamentals of maternity hygiene and advising medical care throughout pregnancy is being sent to every physician in New York state for distribution to his patients in a campaign being conducted by the Maternity Center Association of New York. The leaflet was approved by the committee on public health and medical education of the Medical Society of the State of New York and later by the executive committee of the council of the society. Copies of the "Message to Expectant Mothers and Fathers" will be sent to physicians outside New York on request to the association, 1 East Fifty-Seventh Street, New York City.

Lectures on Traumatic Surgery.—A course of lectures on traumatic surgery, arranged by the committee on public health and medical education of the Medical Society of the State of New York, will be given in Middletown, beginning April 7. The following speakers from New York will be heard:

Dr. Henry H. Ritter, "Wounds and Burns," April 7.
Dr. Willis W. Lasher, "Joint Injuries," April 14.
Dr. Emmett A. Dooley, "Hand Infections," April 21.
Dr. Seth M. Milliken, "Common Fractures," April 28.
Dr. Harry V. Spaulding, "Abdominal Injuries," May 5.
Dr. David Goldblatt, "Fractures of the Spine, Pelvis and Femur," May 12.
Dr. Herbert M. Bergamini, "Head Injuries," May 19.

New York City

Personal.—Dr. Adam Eberle, medical superintendent of Sea View Hospital on Staten Island, has been appointed to that position at Kings County Hospital to succeed the late Dr. Clamor H. Magna, Jr. Dr. Eberle has served in similar capacities during the past twelve years at Coney Island, Kings County, Greenpoint and Sea View hospitals.

Public Health Courses by Mail.—Two courses in public health have been prepared for physicians by the Home Study Department and the De La Mar Institute of Public Health of Columbia University. The first is a study of preventable diseases and the second a study of public health administration. The courses have been prepared under the supervision of Dr. Haven Emerson, professor of public health administration. Information may be obtained from the Home Study Department, Columbia University, 15 Amsterdam Avenue, New York.

The Thomas W. Salmon Lectures.—The first series of the Thomas W. Salmon Memorial Lectures, established in January, 1931, will be delivered by Dr. Adolf Meyer, Baltimore, April 8, 15 and 22, at the New York Academy of Medicine on the general subject "Psychobiology." The first lecture will deal with the relation of psychobiology to general medicine, the second with specific problems, and the third with psychiatric therapy. The Salmon Lectures were established in memory of Dr. Thomas W. Salmon, professor of psychiatry at Columbia University College of Physicians and Surgeons and first medical director of the National Committee for Mental Hygiene, who died, Aug. 13, 1927. A fund of $100,000 was subscribed by his friends and admirers to be administered by the New York Academy of Medicine (THE JOURNAL, Jan. 3, 1931, p. 47). Dr. Meyer, professor of psychiatry at Johns Hopkins University School of Medicine, and director, Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, was announced as the recipient of the first award at a meeting held at the academy, Jan. 10, 1931, when the fund was established (THE JOURNAL, Jan. 24, 1931, p. 280). Dr. Meyer, a native of Switzerland, came to the United States in 1892 and taught at the University of Chicago, Clark University and Cornell University before going to Johns Hopkins. He is a past president of the American Psychiatric Association and the American Neurological Association.

Society News.—Children of New York physicians have recently formed an organization known as "Sons and Daughters of the Physicians of Greater New York." Its purpose is to foster a social relationship and to assist the Physicians' Wives' League in its work of aiding needy widows and orphans of physicians.——Dr. Frederic W. Bancroft addressed the New York Surgical Society, March 9, on "Duodenal Ulcer Under the Therapeutic Management of Internist, Radiologist and Surgeon."——The New York Endocrinological Society was recently organized, with Dr. Walter Timme as president and Dr. Louis Berman, secretary.——Dr. William H. Barber delivered an afternoon lecture before the Medical Society of the County of Queens, March 4, on "Diagnosis and Treatment of Gallbladder Disease—Medical and Surgical."——Drs. George W. Crile, Cleveland, and George E. Pfahler, Philadelphia, addressed the Bronx County Medical Society, March 16, in a symposium on therapy in thyrotoxicosis.——Dr. Maurice O. Magid addressed the Bronx Gynecological and Obstetrical Society, March 28, on dental care during pregnancy.——Dr. Henry Roth will address the Bronx Pediatric Society, April 13, on "Surgical Abdominal Conditions in Infants and Children."——Dr. Jean R. Oliver and Donald D. Van Slyke, Sc.D., addressed the Medical Society of the County of Kings, March 15, on "Method in the Study of Bright's Disease" and "Characteristics of Different Types of Bright's Disease," respectively.——Dr. Walter E. Dandy, Baltimore, addressed the East New York Medical Society, March 28, on "Diagnosis and Treatment of Lesions of the Cranial Nerves."——Among the speakers who addressed the Bronx Pathological Society, March 17, were Drs. Lionel S. Auster, on "Aspiration Biopsy Technics in Tumor Diagnosis," and William Aronson and Julius Rosenthal, "Etiology and Pathology of Rheumatic Heart Disease," respectively.——A symposium on the child was held at a meeting of the International and Spanish-Speaking Association of Physicians, Dentists and Pharmacists, March 18, the participants being Drs. William H. Park, Roger H. Dennett, Charles H. Jaeger and William Engelbach.——Dr. John F. Erdmann, among others, addressed the Medical Society of the County of New York, March 28, on "Tumors of the Cecum."——Among speakers at a meeting of the Clinical Society of the New York Polyclinic Medical School and Hospital, April 4, will be Drs. Frederick M. Allen, on "Insulin in the Treatment of Tuberculosis," and George W. Crile, Cleveland, "Principles Involved in and Clinical Aspects of Denervation of the Adrenal Glands."

NORTH CAROLINA

Society News.—Dr. Archibald A. Barron, among others, addressed the Mecklenburg County Medical Society, Charlotte, January 12, on clinicopathologic aspects of pernicious anemia, pellagra and multiple sclerosis. Drs. Addison G. Brenizer and Oren Moore, Charlotte, addressed the society, February 2, on "How Much Thyroid Tissue Should Be Left at Operation?" and "Induced Labor: An Analytic Study," respectively.——Dr. Coy C. Carpenter, Wake Forest, addressed the Johnson County Medical Society, Benson, January 28, on common precancerous lesions.——Dr. Richard S. Anderson, among others, addressed the Iredell-Alexander Counties Medical Society, Statesville, March 1, on goiter.——Dr. Joseph C. Bloodgood, Baltimore, addressed the Wake County Medical Society, Raleigh, March 10, on "Uterine Cancer and Its Prevention."——Dr. Lester A. Crowell, Lincolnton, addressed the Catawba Valley Medical Society at Lincolnton, March 8, on lung abscess.——Drs. Thomas C. Bost, Charlotte, and Norman O. Benson, Lumberton, among others, addressed the Robeson County Medical Society, Lumberton, February 11, on "Pancreatic Stones" and "Use of Avertin in Anesthesia," respectively.

PENNSYLVANIA

Society News.—Dr. William Wayne Babcock, Philadelphia, addressed the York County Medical Society, February 20, on "Carcinoma of the Large Bowel."——Dr. Thomas Turner Thomas, Philadelphia, addressed the Lackawanna County Medical Society, Scranton, February 16, on acute pancreatitis.——Dr. Francis Clark Wood, Philadelphia, addressed the Northampton County Medical Society, Easton, March 18, on electrocardiography.——At a meeting arranged by the Allegheny County Medical Society and the Odontological Society of Western Pennsylvania, Nathan Sinai, Dr.P.H., Ann Arbor, Mich., gave a lecture on health insurance, March 29, in Pittsburgh.——Speakers before the Pittsburgh Academy of Medicine, March 22, were Drs. James H. McCready, on "Surgical Treatment of Cancer of the Larynx"; Edwin P. Buchanan, "Internal Hernia Following Gastrojejunostomy," and Joseph S. Baird, "Diagnosis and Treatment of Scarlet Fever."——The third annual meeting of the Association of Tumor Clinics under the auspices of the cancer commission of the Medical Society of the State of Pennsylvania will be held in Pittsburgh, April 12.

Philadelphia

Society News.—Dr. Seymour DeWitt Ludlum gave the postgraduate seminar lecture of the Philadelphia County Medical Society, March 25, on "Nervous Disorders: Theory and Treatment Based on Newer Chemical and Physiological Work."

Health Day.—The Philadelphia County Medical Society, in association with allied charitable, philanthropic and educational agencies, has chosen April 13 for the observance of a "health day" in the city. Activities will be centered about the subject "Foods and Health." Dr. James M. Anders is chairman of the general committee. The county medical society will observe the day with an address at its regular meeting by Elmer V. McCollum, Sc.D., professor of biochemistry, Johns Hopkins University School of Hygiene and Public Health, Baltimore, on "Fundamentals of Nutrition." At this meeting Dr. Martin E. Rehfuss will speak on "Standardization of Information Given to the Public by the Medical Profession."

RHODE ISLAND

Personal.—Dr. Jacob Kasanin, Boston, has been appointed clinical director of the Rhode Island State Hospital for Mental Diseases at Howard.

Society News.—Drs. Herbert G. Partridge and Florence M. Ross addressed the Providence Medical Association, March 7, on "The Library of the Rhode Island Medical Society" and "Physiology Taught by Moving Pictures," respectively.——Drs. Frank M. Adams and Harry C. Messinger addressed the Rhode Island Ophthalmological and Otological Society, in February, on chronic mastoiditis and current operative methods in ophthalmology, respectively.

New Hospital for Children.—The Emma Pendleton Bradley Home, said to be the first hospital for children under 13 years of age who are suffering from nervous and mental diseases, was recently opened in East Providence. Among the disorders which will be studied are epilepsy, after-effects of epidemic encephalitis, birth injuries of the central nervous system, brain tumors, and behavior problems needing special treatment. Mr. and Mrs. George Lothrop Bradley gave the funds for the building and its endowment in memory of their daughter. The director is Dr. Arthur H. Ruggles.

Bills Introduced.—S. 160 proposes to accord charitable hospitals treating persons injured in accidents, liens on any judgments or settlements obtained by the injured persons by their injuries. H. 821 proposes that all applicants for licenses to practice the healing arts must pass an examination in anatomy, physiology, pathology, symptomatology and diagnosis, chemistry, bacteriology and public health, to be given by an impartial board of examiners, known as the state board of examination in the basic sciences, as a condition precedent to examination by their respective "professional" boards. H. 820 proposes to require all hospitals, other than state institutions or maternity hospitals now required by law to be licensed, to be licensed annually by the state public health commission.

TENNESSEE

Duplicate Diplomas Issued.—The University of Tennessee College of Medicine, Memphis, has recently issued duplicate diplomas to Dr. Henry Nelson Pulliam, Memphis, and Dr. William Ralph Eddleman, Anna, Ill. Dr. Pulliam's original diploma, issued June 4, 1919, was destroyed by fire. Dr. Eddleman's, issued May 7, 1912, was badly damaged by fire and was destroyed by the university.

Society News.—Dr. Gilbert J. Levy, Memphis, addressed the Nashville Academy of Medicine, March 15, on "Certified Milk—Its Relation to the Medical Profession."——Albert P. Van Dusen, Ph.D., Syracuse, N. Y., addressed the Knox County Medical Society, Knoxville, March 15, on birth control. ——Dr. Fred W. Rankin, Rochester, Minn., addressed the Sullivan-Johnson County Medical Society, Bristol, March 9, on diagnosis and treatment of cancer.——Dr. Thomas D. Moore, Memphis, among others, addressed the Gibson County Medical Society, Trenton, February 29, on "Prostate Gland Operations."

VIRGINIA

Personal.—Dr. Robert Coalter Bryan has resigned from his position as professor of genito-urinary surgery at the Medical College of Virginia, Richmond, after more than twenty-five years' association with the school. Dr. Bryan was made professor emeritus.

Society News.—Dr. John Cooke Hirst II, Philadelphia, addressed the Norfolk County Medical Society, February 22, on "Relation of Certain Pelvic Abnormalities to Remote Complaints." —— Dr. Paul D. White, Boston, addressed the Richmond Academy of Medicine, February 9, on "Treatment of Cardiovascular Disease."——Among speakers at a meeting of the Post-Graduate Medical Society of Southern Virginia, Lawrenceville, February 23, were Drs. Tiffany J. Williams, University, on "Backache in Gynecology," and Hyman Cantor, Petersburg, "Gastro-Intestinal Hemorrhages."

Diphtheria Immunization Campaign.—A plan for a statewide campaign for the immunization of children against diphtheria was recently approved by the council of the Medical Society of Virginia after a conference with Dr. Warren F. Draper, state health officer, who presented the plan as a joint program to be developed by physicians of the state and the state board of health. The campaign will be organized on a county basis through cooperation of county boards of health with local physicians, who will together arrange a program of clinics for each county. The county nurse will make preliminary arrangements and do the educational work required. She will attend the clinics and keep records of the number of children immunized. The state department of health as its contribution will provide the necessary toxoid or antitoxin at a cost of $0.086 per complete immunization, prepare educational material for publicity purposes, provide nurses in counties which have none, hold demonstrations of technic and consultations with physicians who desire these services, and serve as clearing house for all questions arising in the work. The manner of rendering the services and the charges for them are to be determined by the physicians. Reports of cases for eleven months of 1931 exceeded any twelve months' total since 1923 and was the highest since 1926. The last general immunization campaign was conducted in the winter of 1926-1927, with the result that a low diphtheria rate was recorded in 1927.

WASHINGTON

Society News.—Dr. Park Weed Willis will address the King County Medical Society, Seattle, April 4, on "Appendicitis —When and When Not to Operate" and Dr. Frank Jeffery Clancy, on the treatment of neurosyphilis with malaria in 320 cases. The society had as its guest speaker, March 28, Dr. John H. Woolsey, San Francisco, on "Clinical Experiences with Unusual Wound Infections." Dr. Woolsey was the guest of the Puget Sound Surgical Society, March 26, at its annual meeting.

Public Health Conference. — At a conference of private physicians and public health agencies under the auspices of the Washington State Medical Association in Seattle, February 20, discussions were held on the functions of state, city, county and school health departments, on the functions of the U. S. Public Health Service in prevention of disease, on free clinics in official health departments and on the responsibility of the practicing physician toward all of these. Among the speakers were Drs. Horace J. Whitacre, Tacoma, president, Washington State Medical Association; Lunsford D. Fricks of the U. S. Public Health Service; Albert E. Stuht, state director of health, and Austin U. Simpson, Seattle.

WEST VIRGINIA

Society News.—Dr. Max M. Peet, Ann Arbor, Mich., addressed the Ohio County Medical Society, Wheeling, March 25, on "Application of Our Present Knowledge of the Sympathetic Nervous System."——A symposium on gastric and duodenal ulcer was conducted by the Mercer County Medical Society, Bluefield, February 18.——Dr. Robert C. Farrier, Morgantown, addressed the Monongalia County Medical Society, February 2, on "Immunization Vaccines." —— Drs. William Edwin Matthews, Archibald Donald Kessler and Ivan R. Harwood, Huntington, presented a symposium on "Gonorrhea in the Male" at the meeting of the Cabell County Medical Society, February 11.

GENERAL

Society News.—The American Gynecological Society will hold its annual meeting in Quebec, May 30-June 1. Dr. Otto H. Schwarz, 630 South Kingshighway Boulevard, St. Louis, will supply information. —— The Society for the Study of Asthma and Allied Conditions will hold its spring meeting in Atlantic City, April 30.

Traffic Safety Contest.—More than 350 cities have entered a traffic safety contest sponsored by the National Safety Council to run for a year. Each city must report its traffic accidents regularly, carry on an educational program, strengthen its traffic engineering and law enforcement machinery and organize for a continuous effort toward prevention of accidents. The awards will be made largely on the basis of improvement in motor vehicle fatality rates. A trophy will be awarded to the city showing the best record in each of seven population groups.

Kober Medal Awarded to Dr. Joslin.—The Kober Medal for 1932 will be awarded to Dr. Elliott P. Joslin, Boston, at the annual meeting of the Association of American Physicians in Atlantic City, May 3. The Kober Medal is awarded each year to a member of the association who has contributed to the progress and achievement of the medical sciences or preventive medicine. It is awarded by the association on the recommendation of its council through an endowment fund created in 1923 by the late Dr. George M. Kober, former dean of Georgetown University School of Medicine, Washington, D. C. Dr. Joslin, who since 1922 has been clinical professor of medicine at Harvard University Medical School, has attained prominence for his research on diabetes mellitus. The announcement of the selection of Dr. Joslin for the award will be made on Kober Day, April 11, at Georgetown. The medal, which is of coined gold, is struck by the United States Mint at Philadelphia.

Medical Bills in Congress.—*Changes in Status:* Hearings on H. R. 8077, the Beck bill to remove existing restrictions imposed on the prescribing of vinous and spirituous liquor, will be held before a subcommittee of the House Committee on the Judiciary, April 6. Representative Dominick, South Carolina, is chairman of the subcommittee. Other bills relating to the prescribing of medicinal liquor will also be considered. H. R. 7518 has passed the House, with amendments, providing, among other things, for the issuing of licenses to practice the healing art in the Canal Zone, under regulations prescribed by the Public Health Board of the Canal Zone. *Bills Introduced:* H. R. 9494, by Representative Fernandez, Louisiana, providing that the provisions of the laws relating to the National Home for Disabled Volunteer Soldiers shall be amended to include persons who served in the Military Telegraph Corps of the Army during the Civil War. H. R. 10671, by Representative Gambrill, Maryland, to provide medical services after retirement on annuity to former employees of the United States disabled by injuries sustained in the performance of their duties. H. R. 10745, introduced by Representative Celler, New York, at the request of the League for the Modification of the Volstead Act, to modify the restrictions imposed on the prescribing of medicinal liquor, to provide for the distribution of such liquor through the mails, and to provide "that the Secretary of the Treasury is hereby authorized and directed to enter into a 'gentleman's agreement' with American physicians, through the American Medical Association, that where 'any charge at all' is made for a prescription for medicinal liquor, no physician will charge more than 'one dollar.'"

Control of Narcotics.—More than three tons of narcotic drugs were seized at border points throughout the United States under the authority of the Bureau of Narcotics during the last fiscal year, according to a statement of H. J. Anslinger, commissioner of narcotics, before the subcommittee on

appropriations of the House of Representatives. Since the organization of the bureau, July 1, 1930, efforts have been concentrated on international, interstate and wholesale intrastate illicit traffic, rather than on small offenders. The largest single seizure of morphine ever made in federal narcotic law enforcement was a shipment of 17,500 ounces found on the steamer *Alesia*, Dec. 5, 1930, hidden in a shipment of furs from Turkey. Another important seizure amounted to a ton of gum opium. The commissioner declared that Turkey is the principal source of the illicit supply of drugs in this country. Importations from China consist largely of smoking opium used by Orientals on the west coast. In the opinion of the commissioner, the number of drug addicts in the United States is decreasing; he reported that an increasing number apply to the field offices of the bureau for cures. There were 2,461 violators of the narcotic act in federal prisons, June 30, 1931, most of whom were in Leavenworth Annex; these will probably be transferred to the new narcotic farms, one of which is now under construction at Lexington, Ky. The greatest weakness in the narcotic control program is lack of state enforcement, the commissioner declared. Since the organization of the bureau, cooperation of the states has been sought and a uniform narcotic law has been drafted for presentation to state legislatures as soon as it is approved. California, Pennsylvania and Wisconsin already have effective laws. During the fiscal year, 6,075 violations were reported and 3,111 convictions were obtained, with an average sentence of three years. The appropriation for the present fiscal year is $1,708,528.

Regulation of Volatile Poisons.—Interstate and foreign commerce in volatile poisons and preparations containing them, in packages intended for household use, will be placed under federal regulation if a bill submitted to Congress, February 29, by Senator Hiram Bingham, Connecticut, and referred to the committee on agriculture and forestry, is enacted. The bill, which if enacted would be known as the "Federal Volatile Poison Act," provides that poisonous volatile substances shall not be shipped in interstate and foreign commerce or offered for sale in any state or territory in containers intended for household use unless each such container bears a label showing conspicuously (1) the common name of the substance, (2) the name of the manufacturer or distributor and (3) a warning of the dangerous nature of the contents. The following substances are named in the bill as volatile poisons: aniline, benzol, carbon disulphide, cyanogen, ethylene oxide, formaldehyde, methanol, nicotine, nitrobenzol, sulphur dioxide and all halogen compounds of hydrocarbons. The provisions of the act do not apply to sales to or on the prescriptions of physicians, dentists or veterinarians or the sale of chemicals for scientific use. Nor does it apply to common carriers handling the substances in the regular course of business nor to persons handling them for export if the packages are branded in accordance with the regulations of the foreign purchaser and the foreign country. Misbranded packages may be confiscated and the person liable may on conviction be fined not more than $200 or sentenced to prison for ninety days or both. The same penalties apply to any person who alters or destroys the label required by the act on substances subject to its provisions. The Secretary of Agriculture would be charged with the enforcement of the act if it became a law and might formulate any regulations deemed necessary. The provisions of this act are in addition to and not in substitution for the Food and Drugs Act, the Insecticide Act, the Federal Caustic Poison Act and the act regulating the sale of poisons in the District of Columbia.

Report of Commonwealth Fund.—The sum of $2,232,261.91 was appropriated for all purposes by the Commonwealth Fund during the year ended Sept. 30, 1931, according to the fund's thirteenth annual report. In recent years the aid given by the fund to independent projects has been concentrated more and more in the fields of its special interest—public health, preventive medicine, medical research and mental hygiene. However, the need of relief during the past year has led to a temporary increase in grants for general social work or civic purposes. The most significant appropriation in the field of mental hygiene was granted to the National Committee for Mental Hygiene for a study of psychiatric education now being carried on in Massachusetts and Delaware. A grant of $20,500 was made to the American Public Health Association to study the strategy and technic of immunizations against diphtheria, to evaluate methods of controlling scarlet fever, and to measure the effectiveness of prenatal care in preventing stillbirths and maternal and neonatal mortality. In medical research, the most interesting new project of the year is a study of normal kidney function, which is now being conducted under the direction of Alfred N. Richards, Ph.D., department of pharmacology, University of Pennsylvania School of Medicine. The fund is assisting in the study of rheumatic heart disease at the House of the Good Samaritan, Boston. The Institute of Child Guidance in New York will operate on a reduced scale during the current year, and it will be closed, June 30, 1933, when it will have completed six years' service. This decision was said to be the result of the current economic depression. Cooperative health work was inaugurated in Mississippi and Massachusetts. In the rural hospital program, which covers six hospitals, emphasis has been placed on the development of outpatient service. New professorships of preventive medicine were created at Tulane University of Louisiana School of Medicine, New Orleans, and Tufts Medical College, Boston. A division of health studies was created during the year with W. Frank Walker, D.P.H., as director. This division has already set up a tentative but complete system of service records for the rural hospitals, and, in cooperation with the state boards of health, a similar system for the local public health units. Its first responsibility is to make preliminary studies of the health status of districts where the fund is helping to develop health services. These studies, which have laid the foundation for programs in each of the six areas in which the division of public health is active, will shortly be made also in the districts associated with the rural hospital projects and will be repeated from time to time as a means of discovering both the strength and the weakness of local operations. For the first time, the fund made a contribution to the basic training of English psychiatrists through two fellowships at the Maudsley Hospital, London.

HAWAII

License Revoked.—At a special meeting of the board of health, Dec. 2, 1931, the license of Dr. Jiro Yoshizawa, Honolulu, to practice medicine and surgery in the Territory of Hawaii was revoked. The charges against Dr. Yoshizawa were for malpractice and abortion, it was reported.

Death from Plague Reported.—The Chicago *Tribune* reported that a white man had died of bubonic plague on Maui Island, March 6. Admiral Frank H. Schofield ordered the navy shore patrol to withdraw and to cut off all contact of the ships' personnel from the island.

FOREIGN

Personal.—Dr. Julius Wagner-Jauregg, Vienna, celebrated his seventy-fifth birthday, March 8; he retired in 1928 as professor in the medical school of the University of Vienna and as director of the Psychiatric Neurological Clinic.

Conference on Leprosy.—A national conference on leprosy was scheduled to be held in Shanghai, April 14-15, under the auspices of the Chinese Mission to Lepers. It was planned to devote the first day to discussions of the special conditions in China and the second to diagnosis and treatment. No special invitations were sent out, but it was hoped that leprologists from adjacent countries and foreign leprologists who might be traveling in the East would be able to attend.

Smallpox Among Shanghai Refugees.—One hundred and forty-two cases of smallpox were reported at Hongkong, Saigon and other refugee centers the week preceding March 22, according to the New York *Times*. Foreigners are particularly susceptible to this type of smallpox, the *Times* reported, which is a virulent form with half the cases thus far fatal. The epidemic was described as the most widespread and taking the heaviest toll in the Shanghai vicinity in many years. Steamers entering and leaving Shanghai are required to take special precautions against the disease, while Hongkong has ordered that all persons arriving there from Shanghai must be vaccinated.

CORRECTION

Pneumococcus Type II Pneumonia.—In THE JOURNAL, March 5, in the article on "Pneumococcus Type II Pneumonia" by Drs. Russell L. Cecil and Norman Plummer, page 781, paragraph headed "Bacteremia," it is stated, "In a total of 202 cases in which no serum was administered, 162, or 46.4 per cent, showed type II pneumococci in the blood, yielded by culture at some time or other during the course of the disease." This should read, "In a total of 133 cases in which no serum was administered, 68, or 51.1 per cent, showed type II pneumococci in the blood, yielded by culture at some time or other during the course of the illness."

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 5, 1932.

The Value of Tuberculin in Diagnosis

The medical research council has published a research by Dr. P. D'Arcy Hart, assistant to the medical unit, University College Hospital, London, who has observed the reactions to tuberculin of 1,030 clinically tuberculous and 731 nontuberculous patients of all ages. He finds that the tuberculin test is one of scientific accuracy, provided the intracutaneous method of Mantoux and not the cutaneous one of Pirquet is adopted. The positive reactions are not yet susceptible of such quantitative grading as might serve to distinguish active tuberculosis, as such, from the benign results of infection that has at some time or another been implanted in most members of an urban population. A negative reaction, following an adequate dosage of tuberculin, is at all ages of diagnostic value for excluding tuberculous disease, the error being only about 2 per cent. The negative reaction is most likely to be obtained in children who have not yet become sensitized to tuberculin through chance exposure, and it may therefore be of great value for guiding hygienic measures of control in households where a tuberculous patient has been living. The accuracy of the test should make it possible now to obtain trustworthy measurements of the tuberculin sensitization of a population at different ages.

The majority of the urban population become infected before reaching adult life, but comparatively few develop clinical tuberculosis. In a series of more than 1,000 patients known to have clinical tuberculosis, almost 100 per cent were positive to the intracutaneous test, issued in maximal doses, where necessary. The usefulness of the intracutaneous test for the negative diagnosis of clinical tuberculosis depends on the accuracy with which a negative reaction excludes this disease (98 per cent in the present series) and the chance of the patient giving a negative reaction should his condition be due to some cause other than tuberculosis. This chance is determined by the percentage of negative reactors to tuberculin among clinically nontuberculous individuals of the same age and social status as the patient and living in a similar environment. At the present time the test can be profitably applied for the purpose of negative diagnosis throughout childhood in patients of the hospital class living in London and other large cities and possibly even in adults in country and private practice.

The "Radium Bomb"

The controversy aroused by the decision of the National Radium Commission to withdraw the 4 Gm. "radium bomb," which has been in use since November, 1929, has been described in THE JOURNAL. In a communication to the press, the commission states that the continued use of the bomb, in its present form, would be uneconomical and unwarranted, and that the whole subject of surface therapy by means of radium bombs is only partially explored. The commission, in conjunction with King Edward's Hospital Fund for London, is considering what the policy for the future should be. The commission has not lost faith or interest in "bomb therapy," but it believes that further experience in the use of mass irradiation is desirable before this is continued under its auspices. The radium of the bomb can now be used more economically by distribution. In any case the supply of large 4 Gm. bombs to the national centers all over the country would under present conditions be financially impossible, as six such units would absorb the entire stock of national radium. The commission holds that the value of large bombs has not been sufficiently established. Statistical or other reliable evidence of the therapeutic results achieved are either extremely scanty or not available at all. This view is confirmed by information just received from Professors Regaud of Paris, Forsell of Stockholm and Murdoch of Brussels. Professor Regaud has stated that "most of the publications made up to the present on the use and results of bomb therapy are premature." The policy of the commission is the concentration of the national radium at eighteen hospitals, all of which, excepting five regional subcenters, were selected by the medical faculties of the local universities, and all of which are required to satisfy the commission that they are adequately staffed with experts and are provided with the necessary technical equipment. The commission would welcome the setting up of an inquiry, conducted by the medical profession on the lines suggested by the presidents of the colleges of physicians and surgeons into the scientific aspects of radiotherapy.

Shoe Leather Dermatitis

Arising out of a letter in the *British Medical Journal* suggesting that the sumach tanning process was the cause of dermatitis attributed to shoe leather, Dr. D. Jordan Lloyd states that the British Leather Manufacturers Research Association has been inquiring into cases of dermatitis alleged to have been caused by leather. It is unlikely that cases would be due to sumach poisoning, since this is not used in the manufacture of sole leather and is unlikely to have been used in the manufacture of the upper leather. No cases of sumach poisoning have ever been reported to the research association. Possible causes of dermatitis from leather which have been investigated by the research association are: (1) contamination by traces of paraphenylenediamine or other dyestuff intermediates from the dyes used; (2) free chromic acid, also left over from the dyeing process. In spite of allegations as to the presence of paraphenylenediamine in dyed leather, no sample of leather alleged to have been associated with dermatitis seems ever to have been proved to contain this base. At present the association is inclined to the view that dermatitis caused by leather is due either to the presence of free chromic acid or to excessive amounts of water-soluble dyestuffs.

Rheumatism in London Children

Over 30,000 London school children suffer from rheumatism in one of its various forms and more than 20,000 are being treated by the London County Council. At the Society of Medical Officers of Health, Dr. Gerald Slot, physician in charge of the rheumatism supervisory center of the London County Council, stated that in London rheumatism is especially a disease of the artisan class, the children of the wealthy and of the very poor being only slightly affected. It is particularly marked among children of harassed parents who are constantly struggling to make ends meet. A contributory factor is the impossibility nowadays of children obtaining proper rest in crowded houses. In an analysis of 459 cases, Dr. Slot found that the number of children sleeping alone was only 44. In by far the larger number of these cases the room was shared with two, three or four others and sometimes more. He found too that the children went to bed too late and were disturbed by other members of the household, by broadcasting and by phonographs.

Islanders with Perfect Teeth

In spite of much investigation, the causes of the decay on an appalling scale of the teeth of civilized peoples remain doubtful. Recent knowledge of vitamins has given support to the view of a nutritional cause, particularly deficiency of vitamin D. But the supporters of a local cause are by no means silenced. A well known writer, Dr. Harry Campbell, reiterates in the *British Medical Journal* his teaching that adequate mastication and keeping the dental enamel free from protracted contact with fermentable saccharide food will prevent the dental decay. He rebuts the recent claim that raw cow's milk in the diet will prevent caries by quoting the following report in the *New Zealand Dental Journal* on dental disease in Hawaii: "Sunshine, cod liver oil, orange juice, tomato and milk—both human and fresh unpasteurized cow's in good measure singly or com-

bined—do not prevent the rampant disintegration of the teeth of infants and small children during periods of accelerated bone growth." He has seen numerous cases of children, nursed by healthy mothers and fed after weaning on an abundance of raw cow's milk, who displayed the usual proportion of caries. He points out that caries never begins on a smooth enamel surface, such as the labial surface of an incisor, kept clean by constant labial friction.

The lone little island of Tristan da Cunha in the South Atlantic, 1,000 miles west of the Cape, which contains a small white population, living under primitive conditions and seldom visited by ships, has now entered into the controversy. The islanders appear to suffer from no diseases and to die only from old age or accident. In the *Times* is described a recent visit of the warship *Carlisle*, which was made the occasion of a dental survey by Mr. J. R. A. Moore, president of the Dental Society of the Cape Province (South Africa) in cooperation with the surgeon lieutenant-commander of the Royal Naval Hospital, Simon's Town. Islanders to the number of 156, ranging in age from infancy to 92 years, were examined. The teeth of 131 were found entirely free from any decay. Mr. Moore states that such dental perfection is entirely outside the experience of his profession in any other community. The only two cases of marked dental decay occurred in persons born elsewhere and who had lived for some time elsewhere. Yet the islanders never clean their teeth. It is a dental maxim that "hard tack" is desirable for the teeth, yet their food is entirely soft. Their staple diet is potatoes, fish, milk and eggs. Meat is seldom eaten. Flour, tea and groceries, brought by visiting ships, are used as long as they last. What is regarded as of special significance is that they never eat more than one kind of food at a time. They live on potatoes, eaten without salt and unaccompanied by tea or other food. Fish they eat with nothing else, and penguin eggs, perhaps three at a time, are eaten alone. The explanation of the extraordinarily good dental condition has exercised correspondents of the *Times*. One attributes it to increased alkalinity of the blood produced by the large quantity of potatoes eaten. A dentist quotes the remark of an islander who went to the Cape and after a year decided to return home, saying: "In the town it's noise and rush and heavy clothes and many meals, and one can't live long at that." The dentist says that he might have added worry and strain, and that these are great expenders of energy and producers of acid metabolites and as important as the alkali-forming diet. Another correspondent makes the cogent objection to the theory that the islanders' good teeth are due to the potato diet that the Eskimos have perfect teeth and their diet is almost wholly animal.

Payment of Medical Staffs of Teaching Hospitals

In recent years a great change has taken place with regard to the conditions on which patients are treated at the voluntary hospitals. Supported by voluntary subscriptions, these hospitals used to furnish free maintenance and treatment to the poor. But the crushing taxation, largely imposed for "social reform," which among other things includes the provision of medical treatment for wage earners, has altered the position and has rendered payments by patients necessary, but these usually do not cover more than their maintenance in a hospital. The question arose as to the claim of the medical staff to part of the payments collected, which the British Medical Association has always demanded. A joint committee appointed by the British Medical Association and the British Hospitals Association has made an important report on the question. The committee points out that institutional treatment has largely displaced treatment in the patients' own homes. As a consequence, private means are becoming less and less regarded by the public as reasons why a patient should not go to a hospital. This has narrowed the field of private practice, and physicians find it increasingly difficult to earn their living, which in many instances is reflected in an increase of their fees. Another result is a reduction in the number of specialists in a position to give gratuitous service to voluntary hospitals. Moreover, local authorities are now allowed to finance hospitals not only for persons eligible for state relief but for the whole community. These municipal hospitals are tending to approximate to voluntary hospitals in equipment and medical staffs, and the latter are paid. The problem appears to be to devise means whereby all voluntary hospital patients who can afford to do so may make reasonable contribution toward physicians' fees as well as meeting the cost of their maintenance in hospitals. Patients able to pay the full cost should be treated in private wards. Contributions obtained from patients constitute about 10 per cent of the income of hospitals and need not be considered. The funds that arise from contributory schemes (regular contributions made weekly or otherwise during health as an insurance against the cost of possible hospital treatment) are the crux of the matter. The committee thinks that the time has come to recognize the claim of visiting medical staffs to some share of the money raised for the treatment of patients, other than that provided by voluntary subscription for the treatment of free patients. It recommends that contributory schemes be instituted in hospitals where they are not already in existence, that rooms or wards should be provided for patients able to pay, and that a maximum means test be applied before admission of any patient to the general wards.

Sir Frederick Andrewes

Sir Frederick Andrewes, emeritus professor of pathology, University of London, has died in his seventy-third year. He entered the medical school of St. Bartholomew's Hospital, where he gained an open scholarship. After qualifying, he was appointed assistant physician to the Royal Free Hospital, but in 1897 he succeeded Kanthack as lecturer on pathology at St. Bartholomew's Hospital. He soon established a reputation as a great teacher and a pioneer in pathology and bacteriology. His first important original work was a careful histologic study of lymphadenoma, but he is best known for his investigation of the streptococci and the classification, in association with Horder, of these organisms into three main groups—pyogenes or haemolyticus, salivarius or viridans, and faecalis or enterococcus. His last work was on the antigenic structure of bacteria, as demonstrated by their agglutinative reactions. He made important contributions to the study of the antigenic structure and bacterial variation in the Salmonella group. During the war he did valuable work for the war office and medical research council on the cerebrospinal fever and dysentery committees.

PARIS

(From Our Regular Correspondent)

Feb. 17, 1932.

A Peculiar Automobile Accident

A few days ago, in the Bois de Boulogne, a crowd gathered about an automobile stopped in the middle of the street. The traffic officers ordered the driver to go on, as his car was obstructing traffic. But the driver, as well as the companion seated with him, were unable to manipulate the levers. It was necessary to push the car out of the street. The two occupants of the car appeared to be suddenly affected with paralysis of the legs. A physician volunteered his services and discovered that they were both suffering from a comminuted fracture of each patella, which explained why it was impossible for them to execute any movement of the leg. The accident had occurred as the result of an abrupt stopping of the car to prevent a collision. Their knees had been brought violently in contact with the front of their car, causing the patella to be fractured. Accidents of just this type appear to be rare.

The Population of Paris

The Bulletin municipal officiel publishes the detailed results, for Paris and the department of the Seine, of the census taken

March 8, 1931. The total population of Paris is 2,846,923 domiciled inhabitants, 279,111 of whom are foreigners. To these figures must be added 44,097 inhabitants *comptés à part;* that is to say, domiciled in garrisons, institutions of instruction, and the like. This makes a total of 2,891,020 inhabitants, whereas the record for 1926 was 2,871,429. Thus there has been slight increase in population in spite of the annexation to the capital of outlying districts. The total population of the department of the Seine is 4,933,855, as against 4,628,637 in 1926. In Paris the most densely populated ward is the eighteenth, with 288,810 inhabitants, 114,748 of which reside within the boundaries of Clignancourt, which moreover shows a loss in population of 1,109, as compared with 1926. The most sparsely populated ward is the first, which has only 41,461 inhabitants, or 4,207 fewer than in 1926. As a rule, the outlying wards and sections of the city, where large groups of cheap homes or with a moderate rent have been erected, show increases, whereas the central sections of the city, where the commercial establishments are chiefly located, have decreased in population. The suburbs have increased by 285,627 inhabitants since 1926, the district of St. Denis showing an increase of 148,583 and Sceaux an increase of 137,044. The cities of the Seine that have more than 50,000 inhabitants are: Asnières, 63,039; Aubervilliers, 55,480; Boulogne-Billancourt, 85,190; Clichy, 55,332; Colombes, 57,098; Courbevoie, 52,529; Levallois-Perret, 70,908; Neuilly, 51,554; Drancy, 51,058; Saint-Denis, 80,739; Saint Ouen, 53,004; Saint-Maur-des-Fossés, 56,709; Montreuil, 70,365. Paris has 95,015 houses and 1,172,865 households, and the suburbs have 254,436 houses and 750,677 households.

Organization of a French Association of General Medicine

The Association française de médecine générale was recently founded under the honorary chairmanship of Professor Chauffard, with Professor Carnot serving as president, Messieurs Jules Renault and Castaigne as vice presidents, and Mr. H. Godlewski as general secretary. Its object is to express the opinion of French medicine on the most important scientific questions of general interest. It is composed, in France, of French clinicians, and in foreign countries of French-speaking clinicians. In reality, there has been for some time a society of clinicians of general medicine, which has met every year alternately in Paris or in a large university city of the provinces, under the name of Congrès français de médecine, which was open to all learned communications accepted by the committee on organization. In addition, an annual congress of surgery had been held every year in Paris, for the past forty years, which was an important congress organized by the Association française de chirurgie, the members of which are elected and pay an annual contribution, which is employed for the publication of important volumes of session papers. The Association française de médecine will have the result of giving the annual congress of medicine the benefit of this excellent organization, and will at the same time select with greater care the participants.

The Alpine Sanatorium at Briançon

A large sanatorium has been erected in the high region of the Alps, near Briançon. It is magnificently located on a site where, though surrounded by snow for several months of the year, there are annually 300 days of sunlight. The sanatorium is reserved for women, chiefly nurses threatened with tuberculosis. It is well equipped with all the appliances used in the modern treatment of tuberculosis. It was opened recently with special ceremonies, in the presence of two ministers and a large delegation from the Faculté de médecine de Paris and another from the Faculté de médecine de Lyon. The municipality of Briançon, which for a long time opposed the erection of the sanatorium, has exhausted every measure to prevent the sanatorium from being too closely associated with the city of Briançon, which is a well known resort for tourists and famous for its winter sports, so that the proximity of a sanatorium for the tuberculous was thought likely to create an unfavorable impression. Hence, it has been brought about that the locality occupied by the sanatorium has been given the name of Forsville. This is a manifestation of the same narrow spirit that is observed in the towns along the borders of the Mediterranean, which demand that the healthfulness of their climate be vaunted in order to attract tourists, who spend large sums in the hotels but who turn a cold shoulder toward the tuberculous on the ground that they fear contagion, whereas in reality they are more conscious of the fact that these clients are subjected to a diet and are hence less profitable guests.

BERLIN

(From Our Regular Correspondent)

Feb. 8, 1932.

Artificial Production of the Heart Sounds

Dr. Leo Jacobsohn, neurologist of Berlin, who is well known for his research on radio technic, has made use of the new sound film to produce artificially human heart sounds. He recently gave a demonstration on the subject before the Berliner Medizinische Gesellschaft. To be sure, the natural heart tones and murmurs have been previously exhibited by means of the radio, as was reported in THE JOURNAL, Dec. 26, 1931, page 1977. This method, however, has certain imperfections, which fact gives importance to the experiment of Dr. Jacobsohn, for he uses for the production of heart tones and murmurs no living person, and not even a beating heart, but only a photo-electric cell and a plate marked with vibration records.

What is new, in principle, about the method is that the heart tones that are reproduced do not originate in a human being but are theoretically computed on the basis of their elements and are then combined by a form of free composition, and that it has proved possible to produce biologic sound processes independently of the object. Jacobsohn considers that his method will be able to reproduce, true to nature, all the sounds of the healthy and the pathologic heart. The procedure—similar to the sound film—requires a photo-electric (selenium-copper) cell that can transform light into electricity. In a light-sound film, tones are recorded on a film ribbon in the form of lighter and darker lines. When passed before a photo-electric cell, the vibrations of light are transformed into electrical vibrations. By utilizing the methods of radio amplification, the original sound image is reproduced in the loud speaker.

The acoustic wave image of the heart tones and murmurs is more or less known. Taking this as his point of departure, Jacobsohn undertook to figure out the elements of the tones and then to combine the elements into sound images. Every vibration the duration of which ranges between $\frac{1}{50}$ and $\frac{1}{800}$ second was recorded on a transparent plate and passed before a photo-electric cell. Thus the approximate form and position of the various tone elements could be determined. Under constant control of the sound images combined into vibration groups, the method was developed to such an extent that in the loud speaker scarcely any difference between the natural and the artificial tone could be distinguished. It was possible to eliminate the secondary sounds that always accompany high degrees of amplification and to bring out what is typical in any given heart condition. Jacobsohn terms his method *tonretusche,* or sound retouch.

In view of the periodicity of the heart tones, it was not necessary to use a continuous film for the recording. It sufficed to record the tones as lines or points on a small sheet of transparent foil, which turns with the speed of the pulse before a source of light and, in this manner, interrupts the illumination of the photo-electric cell with periodic shadows. Thus the "artificial heart," which consists of the synthesis of any two tones, when amplified by radio technic, will beat for hours in the loud speaker. All the sound images that play a part in the

clinical observation of heart diseases—from normal heart tones to disturbances of rhythm—can be faithfully reproduced.

Jacobsohn, whose demonstration was enthusiastically received by the audience, believes that this method will be incorporated in clinical instruction. From his artificially standardized tones and murmurs he plans to produce an acoustic textbook, as it were, on heart diseases and put the practitioner in a position to control the diagnosis.

Professor Goldscheider, the chairman, who is known as an expert in the matters under discussion, expressed the view that the method would be useful in the future, although he was not willing to accept all the statements made by Dr. Jacobsohn. A better testimony could scarcely be expected. The method is adapted also for the wireless transmission of heart tones and murmurs and will probably be incorporated in the program of Germany's principal radio station and thus demonstrated to the general public.

The Aschheim-Zondek Test in Forensic Medicine

Now that several thousand verifications, reported in the literature, have shown that the Aschheim-Zondek test is, in reality, highly characteristic for pregnancy, there are no reasons why this test should not be employed for medicolegal purposes. Positive results may be secured also with dried blood and urine, as the medicolegalist Professor Goroncy brought out recently in an address before the Königsberger Verein für wissenschaftliche Heilkunde, on the basis of his own research. The dried specimens examined were partly on cloth and partly on glass slides, and were up to 4 weeks old. The material was extracted with water and then injected, some of it being implanted subcutaneously unchanged. In order to make the aqueous blood extracts more easily injectible, they were refrigerated, after detoxication, to a low temperature by means of a mixture of carbon dioxide and ether, and then rapidly thawed out. Treated in this manner, it proved possible to make clotted blood injectible and to secure positive results. On account of the manifold changes that blood spots undergo and by reason of the diverse mixtures that occur in medicolegal practice (dirt admixture, and the like), and because animals do not all react uniformly, it is necessary at first to consider only positive observations and to refrain from drawing conclusions from negative results until many more researches have been made than is at present the case.

A Traveling Cancer Exhibit

A judicious enlightenment of the public is sure to promote the cause of public health. That is the justification for the recent opening in Berlin of the new traveling exhibit of the international health service of the German Hygienic Museum, in Dresden. Addresses were presented by Dr. Hamel, president of the federal bureau of health; Ministerialrat Dr. Lentz, of the Prussian ministry of public welfare, and Stadtmedizinalrat von Drigalski. The exhibit does not include gruesome illustrations but shows, in addition to statistical tables on the alleged increase of cancer, what is known about the origin of the disease and what progress has been made in the treatment of cancer. A special section of the exhibit is devoted to cancer in women. In this section it seemed necessary to cite certain measures; for example, regular examination of the whole body, especially of women beyond 35 years of age, and keeping of a regular record of the menses, especially after a woman is out of the thirties. The early signs of cancer disease are exhibited by means of pictures, so that, in the future, every one who observes such signs in himself will be in a position to ask his physician for more definite information. The last set-up in the exhibit expresses the following idea: "Everything that promotes your general health protects you against cancer." In detail are mentioned proper food, care of the teeth, care of the body, physical exercise, proper clothing, housing and mental hygiene. This traveling exhibit will be sent for a time to all the larger cities of Germany.

RIO DE JANEIRO

(From Our Regular Correspondent)

Feb. 15, 1932.

Saprophytic Forms of the Tubercle Bacillus

In a lecture at the Academia Nacional de Medicina of Rio de Janeiro, Dr. A. Fontes presented the results of his studies on the saprophytism of the tubercle bacillus. The first case reported by the author is that of a young man who had had renal tuberculosis since childhood. The patient's urine contained for many years a large number of tubercle bacilli, as was shown by microscopic examination. Injection of the urine into guinea-pigs caused the development of a fatal generalized tuberculosis, thus proving the virulence of the bacillus. However, the author's patient had a normal development through adolescence and puberty and he is now apparently healthy. Thus the tubercle bacillus in this case is a saprophyte in the patient's organism, but it is always virulent in the organism of the guinea-pig. The second case reported by the author is that of a patient with renal tuberculosis and cavitation of the kidney. Microscopic examination of the urine showed a large number of long bacilli. Cultures made with the sediment of the urine gave origin, in twenty days, to the development of colonies of long bacilli of the same type as those found in the urine. The intravenous injection of these bacilli into the rabbit failed to produce the typical picture of tuberculosis. The animals were killed and smears were prepared with the viscera. A large number of bacilli were isolated from the smears. Cultures made with these bacilli gave origin to the development of typical tubercle bacilli. The third case reported by the author is that of a patient with pulmonary tuberculosis. In this case, bacilli of two different strains were isolated from the cultures made with the pleural fluid. These bacilli retain, up to the present, biologic and cultural characteristics which are different from each other and from those of the tubercle bacillus. The author surveyed the various experiments made in several countries on the variability of tubercle bacilli. Bacillemia is a constant occurrence in animals inoculated with any variety of tubercle bacilli. However, in some instances both adult forms and atypical forms of tubercle bacilli are isolated from the same blood cultures. A bacillemia with acid-fast rod-shaped bacilli, of a type of paratuberculotic bacilli or of certain forms of tubercle bacilli, occurs also in cases of acute polyarticular rheumatism. The author described the parallelism of clinical and experimental results on the mutability of bacteria, with especial reference to Moeljard's work on the cycle of evolution of the tubercle bacillus. He believes that some phenomena of mutability of bacteria may be involved in certain morbid conditions, such as Hodgkin's disease and cancer, and would explain the more or less intense degree of infectiousness of the disease in the given case.

Surgical Treatment of Myopia

Dr. G. de Andrade, head of the ophthalmologic clinics of the Policlinica Geral of Rio de Janeiro and Cruz Vermelha Brasileira, recently published an article on the surgical treatment of high grade myopia by enucleation of the crystalline lens, a topic which at present is of great importance. Patients with high grade myopia live in a condition of physical inferiority. Besides being barred from certain professions because they are deprived of a normal binocular vision, they are liable to suffer frequent disturbances in the fundus oculi and even suffer detachment of the retina. It has been proved that the visual acuity of patients with high grade myopia is improved after enucleation of the crystalline lens, either without wearing any glasses after the operation or through the use of spectacles with glasses of weak graduation, according to the grade of myopia. The surgical treatment for high grade myopia, such as used in former years, was ineffective and dangerous. The satisfactory results obtained by the enucleation of the crystalline lens according to Elschnig's technic for partial or complete removal of cataract

suggested the use of the same technic for the correction of high grade myopia. The surgical treatment of high grade myopia by enucleation of the crystalline lens has been judiciously used by some ophthalmologists who have found the treatment worthy of a place in ocular therapeutics. The enucleation of the lens reduces the refraction of the high grade myopic eye, prevents the spasm of the ciliary muscle, and avoids the exaggerated convergence and the contractions of the external muscles of the eye. Statistical studies on the results of the operation prove that the visual acuity is doubled or at least improved after the operation, even in serious cases. The operation is indicated in adults and in the aged, in whom the zonular fibers are of a greatly diminished resistance. In young people this operation presents more difficulties than in adults. The treatment of high degree myopia in young people should be the same as that used in infantile cataract, namely, discission, to cause the complete absorption of the mass. The practical results obtained with the operation are better in the cases exceeding 18 diopters. The method is contraindicated in patients who have already lost an eye by detachment of the retina or who have cases of detachment of the retina in their own families, and in persons having macular damage, hemorrhage of the retina, choroiditis and similar ocular conditions.

Musical Murmur in Aortic Insufficiency

Prof. A. de Castro, in a lecture recently delivered before the Academia Nacional de Medicina of Rio de Janeiro, said that during the auscultation of some cardiac patients in the Hospital da Misericordia e da Policlinica of Rio de Janeiro he found out that the musical murmur which accompanies aortic insufficiency presents characteristics which have not been described as yet; namely, the appearance of intermittent changes in the musical quality of the murmur. The changes do not alternate rhythmically; that is, the murmur has a musical quality during some heart beats and loses the musical quality during other beats. The musical phenomenon is not related to respiration and appears either during normal respiration or when the respiration is withheld. The phenomenon is well differentiated from the attenuation of the sound that coincides with the diminution of the contractile energy of the heart. The musical tone of the murmur varies according to the site in which the auscultation is made. It is higher when auscultation is made at a point over the aorta and lower when auscultation is made at some other points over the cardiac area.

JAPAN

(From Our Regular Correspondent)

Feb. 26, 1932.

Cause of Death of Former Prime Minister

In November, 1930, Mr. Hamaguchi, then prime minister of the Kensei-kai cabinet, was shot in the abdomen by an assassin at Tokyo station. He was carried to the hospital of Tokyo Imperial University and attended by Drs. Manabe and Shioda, professors in the university. After two intestinal resections he returned home almost recovered, but in August, 1931, more than six months after recovery, he died. Te direct cause of death was found by Dr. Shioda to be an infection from actinomycosis. Therefore, the legal side of the case took a new turn to decide whether the assassin should be convicted of mere injury or of homicide. The professor was called to the court to give evidence as to the real cause of the death from the medical point of view, and he is reported to have considered it quite reasonable to think that the gunshot wound and the surgical operations led to the development of the fungus in the viscera. Judgment has not yet been passed on the case.

Residents Object to Consultation Office

Since the establishment of the Tokyo City Health Consultation Office in Koishikawa, Tokyo, last June, the residents of the borough have strongly objected to the location of the establishment in their neighborhood. At last Mr. Nagata, mayor of Tokyo, has succeeded in bringing about an agreement on condition that the office be for consultation on the health of school children, that it distribute doctors and nurses, and that it admit tuberculosis cases only in the first stage.

Hospital News

The Toyotama Segregation Hospital, which has been undergoing a renovation, has been finished, and the opening ceremony was held, Dec. 11, 1931. The hospital will accommodate 300 cases, and Dr. Nakayama was appointed the director.

The Prevention of Dengue Fever

According to a report of the bureau of the home ministry on dengue fever, which prevailed especially in the Loochoo Islands last June, 470 deaths occurred among 35,129 cases, a mortality of 1.34 per cent, in spite of measures taken toward prevention. At the sixth conference of school sanitarians, last December, it was agreed to petition the minister of the educational department to the effect that dengue should be included among the infectious diseases in school, against which certain preventive measures are required by law.

Japanese Physicians in South America

During 1931 Drs. Okada and Ishikawa were commissioned by the department of foreign affairs to inspect the sanitary conditions among Japanese immigrants and planters in South America. According to Dr. Takagi, who has been to Brazil for the department, our immigrants along the Amazon, who are engaged in farming and who number 170,000, are complaining of various infectious diseases. He recommends that more physicians be sent by the Japanese government to treat these people, although several physicians have already undertaken the work. Early this month Drs. Matsuba of Fukuoka, Yamazaki of Yamaguchi, Kanazaki of Hiroshima and Toyooka of Kumamoto prefectures were sent to make another inspection.

A New Medical College

The new buildings of the Showa Medical College and its hospital have been completed at Nakanobu in the vicinity of Tokyo. The opening ceremony was celebrated at the end of last year. Dr. Okada, dean of the college and emeritus professor of the Tokyo Imperial University, in an address said that the principal object of the new college is the training of men in medical science more on the practical side than on the theoretical. The college has some 700 students at present.

Disease in the "New Stone Age"

At the seventh general meeting of the Japan Scientific Society, held in Osaka last November, Dr. Kiyono, professor in the Kyoto Imperial University, lectured concerning disease and medical practice in Japan in the "New Stone Age." He has made medical researches and anthropologic studies on excavated human bones which were found buried in the shell hills left by those ancient people. He has published his opinion that there existed an age which he called the "New Stone Age." He proves this with stone implements and earthen ware which were made more skilfully than those of the former stone age and which have been discovered with human bones and skulls in various parts in this country. Dr. Kiyono has found some remarkable customs of that age. There was a curious custom of extracting the healthy teeth next to the first molar tooth in puberty. Another custom was to grind the incisors into two or three points, or to grind them flat. Carious teeth were not extracted, but there were only 5.3 per cent of carious teeth found among the 664 teeth excavated in one shell hill in Bitchu Province, and 14 per cent among the 750 teeth discovered in another shell hill in Mikawa Province. As the climate of this country is moist, mummified corpses were seldom found, so that causes of death can only be presumed through the marks left on the bones. Many cases of fracture are found, and traces of

arthritis deformans or calcareous degeneration are to be found in some joints. Evidence of death in battle was presented by stone arrows in the chest bones. Swelling of the bone in otitis was found in 13 per cent of the skulls found in the shell hill in Rikuzen Province, and in 25.7 per cent of those discovered in Bizen Province. And these ancient people had the same curious custom of deforming their skulls as are practiced by savages at the present time. There was found a mark of a big sunken ring from the top to the back of the skull, which seems to have been made while the victim was young. To his great surprise, Dr. Kiyono found three cases in which a surgical operation had been performed; that is, a hole had been made through the parietal bone. In two cases the opening was so irregular that a meningeal artery had been cut and the patients bled to death; in the other case the patient recovered, for the opening in the hole had healed.

Thus Dr. Kiyono has traced the progress of medical practice up to the stone age of tens of thousands of years ago. He will publish the details in a scientific magazine.

The Japan Red Cross

The number of cases attended in all the hospitals of the Japan Red Cross, including those in Formosa, Korea and Mukden, during 1930, amounted to 512,846, of which 41,158 were treated free of charge. The number of tuberculous cases treated was only 818, 23 per cent of which were free of charge. The total sum of money spent on tuberculosis, including that spent in the eight sanatoriums attached to the Osaka and other hospitals, was a little more than 160,000 yen. Some physicians, including Dr. Hata of the Kitasato Institute and Dr. Uematsu of the Keio University, are of the opinion that the Red Cross should take steps to provide additional equipment for tuberculosis, leprosy and mental cases, in view of the ample funds the society possesses and the purpose for which the society is intended. There are others who charge the hospitals with being no more than an establishment on a commercial basis to gather so many pay patients.

BUCHAREST

(From Our Regular Correspondent)

Feb. 26, 1932.

The Physical Development of Rumanian Children

Measurements made on 2,149 school children disclosed that up to the tenth year of life the average weight of boys was greater than that of girls, while between 10 and 15 years the reverse was the case; beyond 15 years again the boy's average weight was greater. The weight of rural exceeded that of urban children. The average of the yearly increase of weight up to the eleventh year of life was almost the same in the two sexes; between 11 and 13 years the development of girls is most increased, and between 14 and 16 that of boys. Above 15 the average height of boys exceeded that of girls; the height of urban children was in general greater than that of rural children. The increase in yearly growth was highest in boys between 14 and 16 and in girls between 11 and 13. The average chest circumference was greater in boys than in girls. This attained its maximum between 12 and 13 years of age in boys and between 14 and 16 years in girls. In rural children the circumference is bigger than in urban children. The greatest degree of health was found in the period of greatest growth; that is, 11 years for boys and 13 years for girls. The dynamometric strength grows parallel with the age of the child; it is always greater in boys and in urban children.

The average weight of the Rumanian boy is greater than that of the French, Belgian, Greek and German boy. As regards the girls, their weight exceeds that of the French and the Belgians, but it is identical with that of the Greek and the German girls. Also the body height of Rumanian school children of both sexes exceeds that of the French, Belgian and Greek children; on the other hand, they lag behind the German, Swedish, English and American children. The chest circumference of the Rumanian school children lags behind that of the French and Belgian, but the latter are surpassed in regard to sturdiness and dynamometric power.

Vital Statistics in Rumania

Dr. C. Gheorrghiu criticizes in the recent issue of the *Revista de Igiena Sociala* the present state of the preparation of mortality statistics. He says that in rural communities death certificates are made out by village magistrates, resulting in the publication of questionable diagnoses, in many cases without due foundation. In some cases, ridiculous and extravagant diagnoses are made. He opines that it is time legislation was enacted in this respect and that death certificates should be made out by parish or district physicians. He quotes some examples of the ridiculous result of the death certificate being made out by laymen. For instance, in 1930 arteriosclerosis was diagnosed in a child, aged 6 years; neurasthenia in an infant, aged 6 days; congenital debility in a person, aged 61 years; congenital pneumonia in a child, aged 5 years; puerperal fever in a child, aged 6 years; incomplete suicide through strangulation; intestinal bacillary pneumonia; intoxication with a piece of glass in the trachea; water in the skull of a child, aged 9 months; puerperal fever without infection; gout in an infant, aged 3 days; natural anthrax in a person, aged 61 years; conjugal debility in an infant, aged 5 days, and cold in the stomach in a child, aged 2 months.

A New Book

Even in Greater Rumania, the publication of a new medical book is something of an event, the number of medical students in the country being insufficient to render the publication of medical books a financial success. The number of physicians of the old kingdom who understand Rumanian numbers 4,000, while the late Hungarian, Russian and German physicians of the newly adjoined territories, not as yet capable of reading Rumanian literature, prefer to read in their native tongue or to read German or French medical books. Therefore there is no great demand for Rumanian medical books. If under such circumstances a medical book is published, it must be a good one, as is the newly published "Practical Treatise on Medical Roentgenology." The editors of this book are three brothers: Isidor, Eugen and Francisc Herskovics; the former is radiologist in Cluj and editor of *Revista Medicala*, a monthly medical journal, and the two latter radiologists in Bucharest. The book deals in a concise form with practical radiology from the point of view of the general practitioner and teaches the radiologist what to expect in establishing a diagnosis. The authors describe many innovations of their own, and a special chapter is devoted to the description of their method of radiologic treatment of some visceral malignant tumors. The book, of 240 pages, is printed on fine glossy paper, with about 200 beautiful, clear illustrations. The book is sold for $3. The publisher of the book is the *Revista Medicala*.

Use of Chemicals in Bread

Recently there was a discussion in the lay press on the occasion of the introduction of the use of chemicals for improving the quality of bread. In Rumania the use of baking powder was prohibited until recently. Rumanian flour is of first-rate quality and does not need whitening, while the use of yeast, which is manufactured inland in huge quantities, renders superfluous the use of any chemicals. In 1909 a conference was held in Bucharest on the adulteration of food articles, and in view of the imperfect status of flour milling, the use of whitening was permitted. The recent enactment allowing the use of chemical substances caused a great uproar in the lay press. Drs. Caracea and Balovin undertook the enlightenment of the public on the subject, having made extensive investigations. They conclude that the action of chemical substances on digestibility seems to be favorable.

Marriages

ARTHUR J. PATEK, JR., Milwaukee, to Miss May Marean of Belmont, Mass., February 17.

JOSEPH M. MARCUS, New York, to Mrs. E. L. Strauss of Cincinnati, January 26.

GERSON LOWENTHAL to Miss Irma M. Pushin, both of Cincinnati, Dec. 20, 1931.

WILLIAM A. CAMPBELL, Lincoln, Neb., to Miss Marjorie Bell Maun, recently.

ISABEL GLOBUS, Brooklyn, to Mr. J. August Gerber of New York, recently.

Deaths

Hadley Williams, London, Ont., Canada; Western University Faculty of Medicine, London, 1888; M.R.C.P., London, and M.R.C.S., England, 1898; F.R.C.S., England, 1899; fellow of the American College of Surgeons; professor of surgery at the University of Western Ontario Medical School; examiner in surgery, Dominion Medical Council; senior surgeon to the Victoria General Hospital and on the staff of St. Joseph's Hospital, where he died, February 24, of heart disease.

Charles Mortimer Montgomery ⊕ Oteen, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1901; member of the Medical Society of the State of Pennsylvania and the American Climatological and Clinical Association; aged 55; died, March 3, in the U. S. Veterans' Hospital, No. 60, of chronic pulmonary tuberculosis.

Francis Sanburn Bascom ⊕ Salt Lake City, Utah; Rush Medical College, Chicago, 1882; fellow of the American College of Surgeons; past president of the state board of health and member of the board of education; on the staff of St. Mark's Hospital; aged 74; died, February 26, in Carmel Highlands, Calif., of coronary thrombosis.

Roy Messer Cater ⊕ Marceline, Mo.; American Medical College, St. Louis, 1906; past president of the Linn County Medical Society; formerly mayor of Marceline and member of the state legislature; served during the World War; aged 50; on the staff of the B. B. Putman Memorial Hospital, where he died, February 16, of nephritis.

Samuel Holt Hodgson, Eastport, Idaho; Medical College of Alabama, Mobile, 1887; member of the Washington State Medical Association; acting assistant surgeon, U. S. Public Health Service, on duty at the U. S. Immigration Station; aged 65; died, in February, of rupture of aneurysm of the thoracic aorta.

Otto Holinger, Chicago; Rush Medical College, Chicago, 1902; member of the Illinois State Medical Society; also a dentist and lawyer; veteran of the Spanish-American and World wars; aged 54; died, February 22, in the Edward Hines, Jr., Hospital, Hines, Ill., of infarction of the left ventricle.

Thomas Franklin Wood, Sallisaw, Okla.; Marion-Sims College of Medicine, St. Louis, 1899; member of the Oklahoma State Medical Association; served during the World War; aged 66; died, Dec. 21, 1931, in the Sparks' Memorial Hospital, Fort Smith, Ark., of perforated duodenal ulcer.

David Dillon Reidy ⊕ Winsted, Conn.; Medico-Chirurgical College of Philadelphia, 1899; fellow of the American College of Surgeons; past president of the Litchfield County Medical Society; visiting surgeon to the Litchfield County Hospital; aged 56; died suddenly, March 4, of heart disease.

William Zellars Holliday, Atlanta, Ga.; University of Maryland School of Medicine, Baltimore, 1882; past president of the Medical Association of Georgia; formerly professor of pediatrics and dietetics, Medical College of Georgia, Augusta; aged 72; died, February 20, of arteriosclerosis.

Thomas Ernest Lockhart, Selma, Ala.; Tulane University of Louisiana Medical Department, New Orleans, 1890; member of the Medical Association of the State of Alabama; aged 67; died, January 5, in the Vaughan Memorial Hospital, of gangrene of the right lung, and septicemia.

John Reed Pipes, Avon Lake, Ohio; Western Reserve University Medical Department, Cleveland, 1888; member of the Ohio State Medical Association; past president of the Lorain County Medical Society; formerly mayor of Avon and Avon Lake; aged 66; died, February 21.

⊕ Indicates "Fellow" of the American Medical Association.

Gordon Lothian Campbell, Kelowna, B. C., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1910; fellow of the American College of Surgeons; served during the World War; attending surgeon to the Kelowna General Hospital; aged 45; died, Dec. 16, 1931.

George F. Dougherty, Neoga, Ill.; American Medical College, St. Louis, 1880; Barnes Medical College, St. Louis, 1894; aged 77; died, February 20, in St. Anthony's Hospital, Effingham, of a fractured leg received when he was struck by his own car, driven by his chauffeur.

Ernest Eugene Hemingway ⊕ Seattle; University of Minnesota College of Medicine and Surgery, Minneapolis, 1908; fellow of the American College of Surgeons; on the staff of the Seattle General Hospital; aged 59; died, February 21, of angina pectoris.

Edward Henry Tegtmeier ⊕ Millstadt, Ill.; St. Louis College of Physicians and Surgeons, 1901; district health officer of the state department of public health; aged 53; died, March 9, in St. Elizabeth's Hospital, Bellevue, of septicemia due to an infection in his mouth.

Edward Hayden Codding, New Rochelle, N. Y.; Long Island College Hospital, Brooklyn, 1891; for many years health officer of New Rochelle; on the staff of the New Rochelle Hospital; aged 65; died, February 14, of coronary thrombosis.

William M. Moore, Arkadelphia, Ark.; University of Tennessee Medical Department, Nashville, 1890; member of the Arkansas Medical Society; aged 70; died, February 4, in a hospital at Hot Springs National Park, of cerebral hemorrhage.

Selling Brill, San Francisco; Harvard University Medical School, Boston, 1924; member of the California Medical Association; aged 32; died, January 23, in the Mount Zion Hospital, of bacterial endocarditis and arthritis of the left knee.

Henry George Bradley ⊕ Wilmington, Del.; George Washington University Medical School, Washington, D. C., 1925; aged 34; on the staff of the Wilmington General Hospital, where he died, February 27, of heart disease.

John Leonard Manning ⊕ Chicago; Hahnemann Medical College and Hospital, Chicago, 1907; formerly professor of obstetrics at his alma mater; served during the World War; aged 50; died, February 28, of chronic myocarditis.

Thomas Peters Deweese, Gamble Mines, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1885; member of the Medical Association of the State of Alabama; aged 71; died, February 2, of cirrhosis of the liver.

Julius Sheppard Moore ⊕ Arkadelphia, Ark.; University of Virginia Department of Medicine, Charlottesville, 1909; served during the World War; aged 51; died, January 27, of injuries received in an automobile accident.

Joseph James Meehan, Denison, Iowa; Northwestern University Medical School, Chicago, 1903; member of the Iowa State Medical Society; aged 57; died suddenly, February 26, of acute myocarditis and bronchial asthma.

Albert H. Delano, Lone Tree, Iowa; State University of Iowa College of Medicine, Iowa City, 1887; member of the Iowa State Medical Society; aged 77; died, February 5, of chronic nephritis and arteriosclerosis.

George C. Kendle, Princeton, Ind.; Bellevue Hospital Medical College, New York, 1879; aged 78; died, February 23, in the Methodist Episcopal Hospital, of shock, as the result of an injury received in a fall.

William Earnest Allaman, Dayton, Ohio; Ohio Medical University, Columbus, 1902; member of the Ohio State Medical Association; aged 59; died, February 27, in the Miami Valley Hospital, of pneumonia.

Arthur Morey Round, Norton, Mass.; Harvard University Medical School, Boston, 1884; member of the Massachusetts Medical Society; aged 79; died, February 24, in the Baker Memorial Hospital, Boston.

Rosingrave M. Eccles, Blissfield, Mich.; Faculty of Medicine of Trinity College, Toronto, Ont., Canada, 1879; member of the Michigan State Medical Society; aged 74; died, February 23, of heart disease.

Charles Alfred Nichols, Urbana, Ill.; Kentucky School of Medicine, Louisville, 1896; formerly member of the board of health and mayor of Urbana; aged 66; died, February 21, of pneumonia.

Allen Airly Berlin, Newfoundland, Pa.; Medico-Chirurgical College of Philadelphia, 1912; member of the Medical Society of the State of Pennsylvania; aged 42; died, February 26, of pneumonia.

Frank J. Rupp, Syracuse, N. Y.; Syracuse University College of Medicine, 1891; for many years on the staff of the Crouse-Irving Hospital; aged 62; died, February 16, of hypernephroma.

Leopold Joseph, Dresden, Germany; University of Göttingen, Germany, 1887; formerly of Cincinnati; aged 68; died, February 20, at Boezen, Italy, of diabetes mellitus and arteriosclerosis.

Alfred Rudolph Stephany, Glendale, N. Y.; Long Island College Hospital, Brooklyn, 1917; served during the World War; aged 39; died, February 19, of pulmonary hemorrhage.

Joseph Emile Stanislas La Coursiere, Manchester, N. H.; Laval University Faculty of Medicine, Quebec, Que., Canada, 1904; aged 51; died, February 20, of influenza and pneumonia.

Minnie M. C. Hopkins, Oconto, Wis.; Hahnemann Medical College and Hospital, Chicago, 1894; aged 66; died, February 17, in the Oconto County and City Hospital, of hemiplegia.

Frank Elmer Locke, Newport, Ky.; Eclectic Medical Institute, Cincinnati, 1882; aged 71; died, February 28, in the Speer's Memorial Hospital, Dayton, of chronic myocarditis.

John W. Dickey, Fort Pierre, S. D.; Homeopathic Medical College of Missouri, St. Louis, 1881; aged 83; died, Dec. 31, 1931, in St. Mary's Hospital, Pierre, of heart disease.

George W. York ✠ Buffalo; Jefferson Medical College of Philadelphia, 1880; aged 82; died, February 13, of cardiac infarction, coronary arteriosclerosis and diabetes mellitus.

Warren Henry Slabaugh, Los Angeles; Bellevue Hospital Medical College, New York, 1883; aged 77; died, February 7, of chronic myocarditis and coronary occlusion.

Amos Lee Wilson, Indianapolis; Medical College of Indiana, Indianapolis, 1887; formerly secretary of the county board of health; aged 73; died, February 24, of heart disease.

S. C. Waller, Shreveport, La.; Memphis (Tenn.) Hospital Medical College, 1888; member of the Louisiana State Medical Society; aged 70; died, February 1, of heart disease.

Robert R. Bridges, Crystal Springs, Miss.; University of Louisiana Medical Department, New Orleans, 1880; aged 77; died, February 26, of carcinoma of the prostate gland.

Thomas Cox, Fall River, Mass.; Long Island College Hospital, Brooklyn, 1893; served during the World War; aged 63; died, February 22, in a local hospital, of appendicitis.

Oliver B. Crumbaker, Duncan Falls, Ohio; Western Homeopathic College, Cleveland, 1869; Civil War veteran; aged 85; died, February 25, in Chicago, of influenza.

Charles Averill Lovejoy ✠ Lynn, Mass.; Harvard University Medical School, Boston, 1872; aged 85; died, February 17, of coronary thrombosis and prostatic obstruction.

Israel Pusey De Foulk, New York; Eclectic Medical College of the City of New York, 1883; aged 75; died, in February, of arteriosclerosis and diabetes mellitus.

Francis Patrick McGinty ✠ Wilkes-Barre, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1907; aged 49; died, Dec. 29, 1931, of acute nephritis.

James Martin Rippey, Union City, Tenn.; University of Tennessee Medical Department, Nashville, 1882; aged 73; died, January 22, of diabetes mellitus and pneumonia.

Thomas Charles McNamara, Hoboken, N. J.; Bellevue Hospital Medical College, 1895; aged 70; died, February 25, of chronic myocarditis and diabetes mellitus.

William Richard Bulgin, Cleveland, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1913; aged 64; died, Dec. 17, 1931, of cerebral hemorrhage.

William A. Jennings, Chico, Texas; Chattanooga (Tenn.) Medical College, 1899; served during the World War; aged 57; died, February 12, of cerebral embolism.

James L. Niblack, Lake City, Fla.; Medical College of the State of South Carolina, Charleston, 1878; aged 81; died, February 7, of carcinoma of the pancreas.

Eugene Francis McCarthy, Newton, Mass.; Tufts College Medical School, Boston, 1910; formerly a pharmacist; aged 56; died, January 29, of pneumonia.

Ferdinand H. Gentsch, New Philadelphia, Ohio; University of Wooster Medical Department, Cleveland, 1878; aged 85; died, February 15, of heart disease.

William Thomas Rowe, Meyersdale, Pa.; University of Maryland School of Medicine, Baltimore, 1895; aged 65; died, February 2, of cerebral hemorrhage.

Gustavus Eliot ✠ North Haven, Conn.; College of Physicians and Surgeons in the City of New York, 1880; aged 74; died, March 1, of angina pectoris.

John Isaac Newcomb, West Unity, Ohio; University of Michigan Medical School, Ann Arbor, 1888; aged 74; died, February 15, of heart disease.

Mary de Booij Ingram ✠ Brooklyn; University of Michigan Medical School, Ann Arbor, 1893; aged 81; died, February 29, of heart disease.

George Nelson Waite, East Orange, N. J.; Bellevue Hospital Medical College, New York, 1887; aged 69; died, March 6, of cerebral hemorrhage.

Maclane Cawood, West River, Md.; University of Maryland School of Medicine, Baltimore, 1902; aged 51; died, February 29, of heart disease.

James Chalmers Morrison ✠ Indianapolis; University of Louisville (Ky.) School of Medicine, 1906; aged 49; died, February 28, of heart disease.

James Harvey Innis, Grand Rapids, Mich.; Rush Medical College, Chicago, 1888; aged 77; died, February 8, of perforating ulcer of the stomach.

Mila Belle Sharp, Aurora, Ill.; Columbus (Ohio) Medical College, 1884; aged 81; died, February 17, in the Copley Hospital, of a fractured hip.

James Laurie, Quebec, Que.; University of Bishop College Faculty of Medicine, Montreal, 1890; aged 66; died, February 22, of pneumonia.

James J. Roberts, Hillsboro, Texas; Louisville (Ky.) Medical College, 1878; aged 80; died, Dec. 15, 1931, in a local hospital, of influenza.

Alfred C. Dogge, Polson, Mont.; Bellevue Hospital Medical College, New York, 1893; aged 59; died, January 26, of cerebral hemorrhage.

John William Devereux, St. Louis; Marion-Sims College of Medicine, St. Louis, 1897; aged 59; died suddenly, February 15, of heart disease.

Luther A. Corwin, Goff, Kan.; University Medical College of Kansas City, Mo., 1890; aged 72; died, February 24, of angina pectoris.

Jefferson D. Cundiff, Drakesboro, Ky.; University of Louisville School of Medicine, 1891; aged 69; died, February 5, of angina pectoris.

Charles Francis Thomas, Fordyce, Ark.; Gate City Medical College, Dallas, Texas, 1904; aged 61; died, Dec. 19, 1931, of heart disease.

Charles Ephraim Martin, Long Beach, Calif.; Eclectic Medical Institute, Cincinnati, 1899; aged 61; died, February 17, of cholecystitis.

Samuel J. Irwin, Tarlton, Ohio; Medical College of Ohio, Cincinnati, 1887; formerly mayor; aged 67; died, February 23, of acute edema.

J. Dawes Ely, Marlboro, N. J.; Jefferson Medical College of Philadelphia, 1882; aged 73; died, February 8, of carcinoma of the bladder.

Edward Shoemaker Murray, Denver; St. Louis College of Physicians and Surgeons, 1885; aged 74; died, February 23, of pneumonia.

T. Dayton Meguire, Cincinnati; University of Louisville (Ky.) School of Medicine, 1892; aged 66; died, February 22, of pneumonia.

Abram E. Stevens, Argos, Ind. (licensed, Indiana, 1897); Civil War veteran; aged 86; died, January 18, of pneumonia and influenza.

Arthur W. Rowe, Old Town, Maine; Medical School of Maine, Portland, 1887; aged 73; died, February 12, of pneumonia.

Elmer C. Raudebaugh, West Salem, Ohio; Starling Medical College, Columbus, 1896; aged 61; died, February 13, of influenza.

Robert Pierce Thomas, Glencoe, Ky.; Kentucky School of Medicine, Louisville, 1875; aged 80; died, February 23, of nephritis.

John Leo Batterton, Forty Fort, Pa.; Baltimore Medical College, 1893; aged 62; died suddenly, February 18, of angina pectoris.

Marcus D. Satterlee, Andover, Ohio; Cleveland Medical College, 1893; aged 77; died, February 5, of mitral insufficiency.

Edwin G. Klein, Corona, N. Y.; Long Island College Hospital, Brooklyn, 1896; aged 60; died, March 2, of pneumonia.

Robert P. Nelson, Monticello, Ark. (licensed, Arkansas, 1903); aged 70; died, January 16, of cerebral hemorrhage.

James H. Clark, Unity, Wis.; Rush Medical College, Chicago, 1883; also a pharmacist; aged 76; died, March 6.

Correspondence

"SAVER OF MOTHERS"

To the Editor:—By authorization of the Council of the Chicago Medical Society, I write to protest in the name of that organization against articles appearing in lay publications derogatory to the medical profession. The latest contributor to this campaign is de Kruif, who writes in the *Ladies' Home Journal* on childbed fever, a subject which neither his training nor his experience entitles him to discuss. Organized medicine has spent a wealth of time and money in devising ways and means to reduce the mortality from puerperal fever, and any honest contribution to the solution of the problem would be extremely welcome.

In Illinois, especially, a notable reduction in maternal and infant mortality has been secured and this record is the more impressive since it occurs in one of the few states which has not been pauperized by the acceptance of the Sheppard-Towner dole with its matriarchal coddling and paternalistic presumption.

Regardless of the motives prompting publication of the article, the evil effect on the medical profession is obvious. Neither does the uncertain intent of the article prevent it from being a source of injury rather than a help to the cause it professes to serve, since it will render pregnant women unjustly afraid to enter the hospitals, wherein alone they can find the greatest safety.

The medical profession protests further that it is impossible to have 23,000 cases of labor honestly observed, without a case of childbed fever, owing to the fact that many women are unclean and infect themselves, while some are infected through the blood or otherwise, without guilt on the part of the attendants or instrumentation. These with personal differences in resistance and immunity, unsuspected tumors, or slumbering foci in other parts of the body, such as the teeth and the gallbladder, bring the average mortality up to about 1.5 per cent for all cases. Every thoughtful and discriminative obstetrician knows that this is true. He also knows that reports like the one quoted cannot be honestly substantiated.

Childbed fever is not always a preventable disease, as the author of the article so positively and ignorantly asserts. Pneumococci and streptococci are everywhere—even in superclean hospitals and in the mouth of every person, patient or not.

The really informative portion of this article could have been secured by an hour's reading in any good history of medicine; and if the author spent four years, as stated, in collecting his data, it is queer that he did not somewhere run across a reference to the work of Lister, Pasteur and Koch, whose investigations gave the Semmelweis discovery a rational and intelligible foundation.

That such a topic should be selected for popular consumption is unfortunate from every standpoint; but, having been chosen, it should not have been published without meticulous editing by responsible and experienced specialists who were cognizant of the facts and had the background for a trustworthy presentation. The paper as issued is injurious primarily to our American women, unfair to all of our hospitals, and especially unjust to the medical profession.

The Chicago Medical Society deplores the inaccuracies of the article and resents the disingenuous reflections of the writer, both open and surreptitious, on the medical men of America.

CHARLES B. REED, M.D., Chicago.

Secretary, Public Relations Committee,
Chicago Medical Society.

To the Editor:—The editorial "Saver of Mothers" (THE JOURNAL, March 12, p. 891) is splendid. Years ago a statement was made, and it has been repeated thousands of times, that the maternal mortality rate of the United States is higher than that of any other civilized country—seventeen civilized countries are mentioned. This seems so impossible and preposterous that it should be questioned. The first premise to investigate is: Are the statistics of different countries absolutely comparable?

There is ground for a difference of opinion concerning the need for isolation of obstetric from other patients.

If there is a *really* higher maternal mortality rate in the United States, it is up to the obstetricians to look into the cause.

If one obstetrician or one hospital has a higher maternal mortality rate than another, the causes should be studied by their peers, that is, by competent obstetricians assisted by a statistician.

REYBURN MCCLELLAN, M.D., Xenia, Ohio.

To the Editor:—I wish to express my deep appreciation for your editorial entitled "Saver of Mothers." Particularly does the sentence "Physicians may prevent infection from without the body but there are cases of infection from within" hit home. I had a case in my own experience in which puerperal infection developed forty-six hours after the delivery of the child in a hospital under conditions of the strictest asepsis. The patient recovered.

M. J. LIEBERTHAL, M.D., Ironwood, Mich.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

APOPLEXY AND EXTERNAL STRABISMUS IN NEUROSYPHILIS

To the Editor:—What percentage of apoplexy is concurrent with latent syphilis, and what percentage is of unknown origin? What percentage of external strabismus is concurrent with latent syphilis or neurosyphilis, and what percentage is due to unknown causes (exclusive of accidents, tumors and so on)?

CARLETON DEEDERER, M.D., Miami, Fla.

ANSWER.—There is a distinct paucity of information based on modern methods of diagnosis in syphilis from which to answer the two questions asked. No exact percentages could be found even after rather thorough search of the standard works, such as Nonne, Fildes (Unsuspected Involvement of the Nervous System in Syphilis, Great Britain National Health Insurance Reports) and Forster, in volume iii of the Handbuch der Neurologie (Die Syphilis des Zentralnervensystems). Goennerich, Southerton, Solomon and the Handbuch der Haut- und Geschlechtskrankheiten also give no satisfactory information. The following general statements, however, may be of some assistance:

Nonne states that "the percentage of incidence of cerebral arteriosclerosis is much higher in young individuals below the arteriosclerotic age of 45, and syphilis must therefore receive first consideration in cerebral vascular disease in this class." Nonne also points out the impossibility of definitely stating whether an apoplexy is of syphilitic origin or not, stressing the comparative frequency of a negative spinal fluid serologic test. Southerton and Solomon speak of the "large and important group" of vascular neurosyphilis and also emphasize the difficulty of distinguishing vascular disease due to syphilis from that due to other causes. Gowers, quoted by Nonne, analyzed fifty-six cases of syphilitic hemiplegia and emphasizes the early onset of the process; in 25 per cent of cases the vascular accident occurred within two years after the chancre. Nonne also states that syphilitic apoplexy is an extremely rare occurrence in congenital syphilis. Forster also emphasizes the high incidence of syphilis as a cause of apoplexy in young patients but gives no percentage summaries. He also remarks on the difficulty of labeling an apoplexy as syphilitic in a given case and states that no localization of brain hemorrhage is to be interpreted as peculiar to syphilis. He also doubts whether the pathologic changes are specifically recognizable.

With reference to the second question, Graefe (quoted by Nonne) states that more than half of all paralyses of the eye muscles are of syphilitic origin. Alexander states that out of 269 cases of eye muscle paralysis 53 per cent were due to syphilis. Collus and Wilde (Pathology of Ophthalmoplegia, London) say that "one third of 144 cases of eye muscle paralysis were due to

syphilis." Steiner in the Handbuch der Haut- und Geschlechtskrankheiten gives no percentage tables concerning vascular brain accidents but, like the others, mentions the frequency of syphilis in young persons with hemiplegia. De Schweinitz does not seem to mention the frequency of various causes or strabismus but gives syphilis first place and does not include any unknown causes.

INCIDENCE OF LEAD POISONING

To the Editor:—Is there an increase of lead poisoning and does tetraethyl lead, given out in such large invisible clouds as it is from exhausts, contribute?

CARLETON DEEDERER, M.D., Miami, Fla.

ANSWER.—The determination of increase and decrease in the incidence of lead poisoning is bound up in so many variables that a ready answer cannot be made. The best information on this subject is to be found in the yearly committee reports of the American Public Health Association. These reports were begun in 1928. A review of these reports seems to establish that deaths from frank lead poisoning are definitely fewer than a decade ago. However, the bodily harm from low-grade lead poisoning is so insidious in its development that many deaths properly attributable to lead as the primary factor are accredited to dysfunction of the heart or kidneys without any consideration for the part earlier played by lead.

The incidence of lead poisoning, in a measure, depends on the extent of production of this substance. In 1900 only 270,824 tons was produced. Approximately three times that amount was yearly produced in the period just preceding the present economic situation. It is obvious that much increased exposure will be provided under conditions wherein three times as much lead is employed. At the present time the tendency exists to use lead in alloys that ordinarily are composed of more valuable metals. On this account, lead poisoning in brass foundries and in polishing and buffing work is on the increase. Wider interest and better diagnostic methods are leading to increased recognition of mild lead cases that otherwise might be overlooked. This has prompted the belief that most painters who have ever used lead paints over any considerable periods will present some evidence of injury from lead. Such diagnoses augment the statistical records of the present day; much of this low grade lead poisoning always existed but was not detected. Thus the situation is more or less artificial. Proof is lacking that tetraethyl lead in gasoline constitutes an extensive hazard. It is probable that in automobile traffic, with its clouds of fumes, carbon monoxide is a greater hazard than tetra-ethyl lead.

Further information with respect to the comparative incidence of lead poisoning for various periods may possibly be had by communicating with the chairman of the Lead Poisoning Committee of the American Public Health Association, Dr. Carey P. McCord, Cincinnati, or with the United States Public Health Service, Washington, D. C., which, in collaboration with a special committee, has promulgated regulations concerning the sale of gasolines containing tetra-ethyl lead.

EFFECT OF SEDATIVES ON BASAL METABOLIC RATE

To the Editor:—I would appreciate it if you would tell me the effect of sedatives and narcotics on the determination of the basal metabolic rate.

L. A. CROWELL, M.D., Lincolnton, N. C.

ANSWER.—By the term "basal metabolism" is meant the minimal heat production of an organism measured from twelve to eighteen hours after the ingestion of food and with the organism at complete muscular rest. This minimal heat production is commonly measured indirectly by analyzing the end-products that result from oxidation within the organism or, Boothby and Sandiford say (Basal Metabolic Rate Determinations, Philadelphia, W. B. Saunders Company), from the amount of oxygen used and the corresponding amount of carbon dioxide produced, together with the total nitrogen eliminated in the urine.

A general statement, which would include all of the sedatives and narcotics, cannot be made as to their effect on the basal metabolic rate. Among certain studies that have been made are those of Anderson, Chen and Leake (The Effects of Barbituric Acid Hypnotics on Basal Metabolism in Humans, *J. Pharmacol. & Exper. Therap.* **40**:215 [Oct.] 1930). They say that within the recommended therapeutic doses by mouth, barbital, ipral, neonal and phanodorn tend to reduce oxygen consumption and tactile discrimination but to increase respiratory rate. Dial seems to have little constant effect on oxygen consumption, although it depresses tactile discrimination. Amytal and phenobarbital tend to increase oxygen consumption except in relatively high dosage. Barbital seems more uniformly depressing than its common derivatives, both on basal rate and attention and on pulse rate and blood pressure.

Barbour, Gregg and Hunter (The Calorigenic Action of Morphine as Revealed by Addiction Studies, *J. Pharmacol. & Exper. Therap.* **40**:433 [Dec.] 1930) found morphine essentially a metabolic stimulant. Seager, Verda and Burge conclude after an experimental study entitled "The Stimulation of Metabolism by Alcohol" that alcohol, in addition to serving as a source of heat and energy, may also serve another function of the foodstuffs; namely, that of stimulating metabolism. Kerti (Action of Atropine on the Basal Metabolism, *Klin. Wchnschr.* **8**:1408 [July 23] 1929) studied the oxygen consumption during fasting in twenty patients following the subcutaneous injection of atropine sulphate and following the administration of food and atropine, having in view an explanation of the dependence of the basal metabolism on the sympathetic nervous system. In fourteen cases there was an increase in the oxygen consumption during fasting following the injection of atropine, in four cases there was a definite drop, and in two cases the oxygen consumption was unchanged. Herbst (Influence of Cocaine on Basal Metabolism, *Arch. f. exper. Path. u. Pharmakol.* **157**:131 [Dec.] 1931) studied metabolism in bodily work. He concluded that with great probability one can eliminate an action of cocaine on the quantitative conditions of the basal metabolism. However, the recovery following work occurs more rapidly under cocaine than without it. The restitutional processes are compressed more into the first stage of recovery and the oxygen consumption returns sooner to the resting value than without cocaine. The chief reason for the acceleration of the recovery process, he says, is a central abolition of the sense of fatigue. Holcomb (Basal Conditions in the Estimation and Interpretation of the Basal Metabolic Rate, *Northwest Med.* **22**:203 [June] 1923) says that caffeine will stimulate metabolism; also that fourteen hours before a test is made all medication should be stopped to remove the possibility of its effect. Stoner (Notes on Basal Metabolism, *Boston M. & S. J.*, Aug. 16, 1923, p. 232) says that the drinking of alcoholic beverages during the evening before the test raises the metabolic rate. The Benedicts (A Permissible Breakfast Prior to Basal Metabolism Measurements, *Boston M. & S. J.*, May 31, 1923, p. 849) also say that caffeine raises metabolism.

POSSIBLE DIAGNOSIS OF POLIENCEPHALITIS

To the Editor:—A man, aged 35, while working outdoors at noon on the hottest day of the past summer, was seized with a sharp pain over the right eye and with vertigo. He soon felt numb over the entire left side of his body. He also heard a buzzing in his ears. The family and past personal history are insignificant, except for moderately heavy alcoholic addiction. On examination he was found to be alert but slightly deaf. He dated this from his attack. The pupils were small, irregular in outline, and reactive to light and in accommodation. The consensual reflex was normal. The tonsils were hypertrophied and subacutely inflamed. There were many carious fangs. The systolic blood pressure was 120; the diastolic, 80. The temperature was 100 F., the pulse 90. The soma was otherwise normal except for slight tenderness over the lower cervical spine. Neurologic examination by cranial percussion and auscultation gave negative results. There was tenderness over the first and second trigeminal nerves. Nystagmus was present, with the slow component to the right. There was internal strabismus from a right sixth nerve. The patient was unable to move his eyes to the right past the midline. There was complete paralysis of the right seventh nerve, peripheral in type. There was a questionable weakness of the left seventh nerve. Hearing was markedly diminished on the right, although the patient thought it was poorer on the left. He had difficulty in the enunciation of words. There was no demonstrable motor or sensory aphasia. The knee jerks were increased, more so on the left side. Abdominal reflexes were absent on the left, weak on the right side. There was complete loss of pain and temperature sensibility on the left side of the face and body, but no impairment of tactile sensibility. The Babinski reaction was absent. The Romberg test revealed swaying and a tendency to fall forward to the left. The gait was ataxic; the left arm and leg were also ataxic. The spinal fluid on two examinations showed no increase in pressure or cell count. Sugar was present, globulin absent. The Wassermann reaction was negative at both examinations. On one of the two occasions the colloidal gold test revealed a meningitic curve. The temperature rose irregularly, reaching a maximum of 103 on the thirteenth day, falling to normal on the sixteenth day, and remaining so. At first he was irrational and required restraint. Later he was drowsy. Am I correct in placing the lesion in the caudal extremity of the pons? Would this account for all the conditions found? Is it probable that severe exposure to the heat was directly or indirectly responsible for the sudden onset? If so, in what way? If not, what might the etiology be, exclusive of unexplained hemorrhage, embolism, tubercle or gumma? What would be a rational therapy? Please use initials only.

M.D., New York.

ANSWER.—From the standpoint of localization it is difficult to explain all the signs and symptoms on the basis of a single lesion. The pyramidal tract on the right side was involved, as shown by the increased deep and absent abdominal reflexes. The left lateral spinothalamic tract of the right side was affected, as shown by the loss of pain and temperature sensibility of the left side of the body, but in addition there was an

involvement of the ventral secondary afferent pathway of the fifth nerve on that side. The paralysis of the right sixth and seventh nerves was probably the result of involvement of the emerging fibers for these nerves. Paralysis of conjoined movements of the eyeballs to the right, however, points to another lesion on the left side, affecting the aberrant oculogyric pyramidal fibers. The ataxia of the left side may have been due to a lesion of the spinocerebellar tracts if no loss of deep sensibility existed. The lesions undoubtedly were localized in the pons, the uppermost probably being in the level of the entrance of the sensory portion of the fifth sensory root.

The febrile course and evidence of cerebral excitation as well as the multiplicity of the lesions in the pons speaks for an inflammatory disease such as would be compatible with an acute poliencephalitis inferior or an acute disseminated poliencephalitis.

There is no specific treatment for the acute stage of the disease. Later small doses of potassium iodide and arsenic, either by mouth in the form of solution of potassium arsenite (Fowler's solution) or hypodermically as sodium cacodylate, may be of service. If the facial paralysis is peripheral in type, electrotherapy will be necessary.

ERYTHROMELALGIA

To the Editor:—A healthy woman, aged 26, with three healthy children, awoke three weeks ago with the feeling that the right big toe was asleep; this continued for thirty-six hours, when severe pain developed and lasted several days. The toe became blue when the foot was lowered and pink when it was raised. The toe continues to be sore on pressure and blue, and the veins are engorged. Several of us have made a diagnosis of erythromelalgia. The Kahn test is negative. Will you please advise if there is any effective treatment. Kindly omit name. M.D., Florida.

ANSWER.—The symptoms described fit the picture of erythromelalgia; but in addition to the pain and redness, which may vary to cyanosis with venous engorgement, there is increased heat and swelling. In practically all other local vascular diseases in the extremities, heat loss is present. If the foot is hot and the arterial supply intact it would favor the diagnosis of erythromelalgia. Gout and acute arthritis are to be excluded.

The treatment of erythromelalgia is not satisfactory. Ice baths and contrast baths to the foot relieve the symptoms, as occasionally does elevation. Epinephrine hypodermically may give temporary relief. Foreign protein therapy has also been employed.

If there is no organic lesion of the central nervous system, recovery may occur spontaneously but unfortunately does not always do so.

DERMATITIS FROM SHOE DRESSINGS

To the Editor:—I am treating several cases of what appears to be acute dermatitis of violent character. The patients in question advise me that they are using in their occupation as shoe "dressers" Radio Dribrite Polish and Gun-Metal Polish, both of these manufactured by S & F Blacking Company, 70 Beverly Street, Boston. Please omit name.

M.D., New York.

ANSWER.—In self-shining shoe dressings, some or all of the following substances may be present: methyl alcohol, carbon bisulphide, benzine, benzene, shellac, nigrosin, logwood, turpentine, camphor, gum rubber, orthodichlorobenzene.

Inquiry was made of the S & F Blacking Company concerning the composition of Radio Dribrite Polish and Gun-Metal Polish. The firm gladly furnished the information requested, replying as follows:

The Radio Polish contains Canauba Wax, Conti's Pure Castile Soap, Borax and a small amount of Shellac. This is a Water Solution and also contains in addition to the above mentioned materials a small amount of Essential Oil which is put in simply to give it an odor. The chemical term for this Essential Oil is Oil of Camphor Sassafras.

The Gun Metal Polish is composed of the same material as the Radio Dribrite Polish with a small percentage of Nigrosin added to make it black.

While complaints of this nature are unusual, we might say that we heard of a case a short time ago where the dresser had a similar complaint. The person in question was one of a row of several operators, all using the same materials at the same time and this was the only case where the operator had any trouble. It would therefore seem that some skins are more susceptible than others. In the case in question the trouble ceased and the operator recovered fully within a short time after her work was changed.

These dressings are used in practically all of the leading shoe factories throughout the country.

If we can be of any further assistance to you, please do not hesitate to call upon us.

Recent developments have led to the application of carbon tetrachloride, dichlor and trichlor ethylene, cellulose compounds, and divers esters and alcohols, in shoe dressings. In addition, old formulas indicate the use of such producers of dermatosis as sodium carbonate (soda ash), potassium dichromate, gasoline, asphalt, pitch, soy bean extractives, cassia oil, dyes of the para or meta phenylenediamine series, such as bismarck brown, mineral acids, nitrobenzene and kindred substances.

Dermatitis from leather dressings is a reasonable expectancy among leather dressers, shoe finishers and shoe shiners. The substances used for cleaning up of the hands after work periods are often skin irritants, notably benzene, benzine, turpentine, carbon tetrachloride, and abrasive soaps.

Queries and Minor Notes on shoe polishes or dyes have appeared in THE JOURNAL from time to time: April 27, 1929, p. 1471; Jan. 17, 1931, p. 212; Aug. 22, 1931, p. 557. Dr. R. E. Stifel reported a case of methemoglobinemia due to poisoning by shoe dye (THE JOURNAL, Feb. 8, 1919, p. 395, and there was an editorial on shoe dyes and aniline poisoning, July 3, 1926, p. 34.

INCREASED SEXUAL DESIRE AT CLIMACTERIC

To the Editor:—I have an unusual case about which I should like some information. Mrs. A., aged 35, married at 16, has five children. She had a subtotal hysterectomy about three years ago and is in extra good physical condition at present. Her habits and sexual life were perfectly normal before her hysterectomy and afterward until six months ago, when she began to get passionate and this has made her nervous to the extent that she is afraid of herself. She is energetic in caring for her children and is seeking some relief from her present condition. Please omit name and city. M.D., North Carolina.

ANSWER.—Uncomplicated supravaginal hysterectomy has no influence on the sexual activity of the patient. Sometimes there is an earlier menopause in a woman who has been subjected to complete or even partial hysterectomy. In view of the fact that the sexual impulse is sometimes greatly accentuated near and at the time of the menopause, the thought occurs that the patient may now have markedly increased desire because of an impending climacteric. The treatment is symptomatic; avoidance of coffee, nervous sedatives and life outdoors are helpful.

TRICHINOSIS

To the Editor:—A woman, aged 18, has trichinosis and is now in the stage of muscle pain. She had acute abdominal pain nine weeks ago simulating acute appendicitis. At the hospital a complete blood examination was carried out especially after a history of ingestion of much raw pork was elicited, and the only abnormality noted was a mild eosinophilia, 15 per cent. She was given 3 grains (0.2 Gm.) of calomel followed in four hours by 1 ounce of magnesium sulphate. She also was, and is now, taking 60 grains (4 Gm.) of calcium lactate. I have not been able to find any further treatment that is efficacious in curtailing these muscle pains. 1. What is the latest treatment that will give good results? 2. Would it be well to give cinchophen for these pains? 3. Do you advise massage of the extremities? If so, what do you suggest? Please omit name. M.D., Illinois.

ANSWER.—1. There is nothing new within recent years in the treatment of trichinosis. The arsenicals, as neoarsphenamine, have been tried without any effect. The reason for this is self evident when the nature of the infestation of the muscles is taken into consideration.

2. Cinchophen will relieve the pain just as any other coal tar derivative will. There is no reason why this preparation should have any advantage over acetylsalicylic acid or amidopyrine. On the contrary, the prolonged administration of this drug has led to liver injury and death of the patient.

3. After the acute stage of the muscle pains is over, heat in any form, such as hot applications, the therapeutic lamp or diathermy, is useful. Gentle massage is of value, but vigorous massage will increase the pain.

GLUTAMIC ACID HYDROCHLORIDE EFFECTS ON HYDROCHLORIC ACID IN STOMACH

To the Editor:—Does glutamic acid hydrochloride increase free hydrochloric acid in the stomach?

MARY L. ROSENSTIEL, M.D., Freeport, Ill.

ANSWER.—Glutamic acid hydrochloride dissociates almost completely in water, so as to liberate hydrochloric acid. This reaction would take place in the fluids of the stomach as well as in water. The question as to whether an increase in "free hydrochloric acid" would result will obviously depend on the possible presence of other acid-binding substances in the stomach. In the presence of a considerable amount of protein, the acid might rapidly be "combined." In order to avoid the effects of the hydrochloric acid derived from dissociation of glutamic acid hydrochloride, the product is administered in gelatin capsules which do not disintegrate and therefore protect the product until it reaches the stomach.

USE OF MERSALYL (SALYRGAN)

To the Editor:—Yesterday a consultant advised me to use mersalyl (salyrgan) and dextrose intravenously in a case of anemia. I wonder whether the experience of other men justifies this procedure. Three years ago I treated a woman, aged 50, who had had chronic nephritis five years, swelling of the legs, and no other complaints. The systolic blood pressure was 160; diastolic, 100. After other medication had failed to reduce the swelling, I gave mersalyl intramuscularly. On the same day she got worse, and in a week died of anemia. Please omit name.

M.D., Indiana.

ANSWER.—Mersalyl (salyrgan) is an organic mercury salt which is used chiefly as a diuretic: it induces diuresis only provided sufficient renal tissue is still intact and is therefore contraindicated in acute diseases of the kidney as well as in advanced nephritis. The question arises whether the mersalyl and dextrose were advised as a method of treatment for the anemia or whether the anemia was an accompanying condition. The indication for the use of mersalyl is quite definite and is the accumulation of edema fluid in the body. If the edema is of cardiac or hepatic origin, or not associated with demonstrable marked lesion of the kidneys, mersalyl is indicated. At times it produces diarrhea or other gastro-intestinal upsets, but we are not aware that anemia is a contraindication to its use. Nor do we know of any literature that would justify its use as a treatment of anemia. Most physicians agree that nephritis is a contraindication to its use, although a number of men have in recent years not been so strict about this matter.

SURGERY IN GLAUCOMA

To the Editor:—A certain patient has chronic glaucoma and has lost the sight of one eye. The remaining eye is badly damaged by chronic glaucoma. He is under the care of a competent eye specialist who hesitates to operate, as he explains, because the sight is so far gone he fears the operation might not result in saving the sight. Therefore, the patient is being treated medically. Now the point of my question is this: Is there any one who is treating glaucoma with good results, by operation on the sympathetic nerves or ganglions? It is well known that progress is being made, and in case there is any one who does such an operation successfully today, will you be kind enough to let me know whether results are obtained.

J. P. TALMADGE, M.D., Brooklyn.

ANSWER.—A good many years ago Jonnesco advocated bilateral extirpation of the superior cervical sympathetic ganglions for the reduction of tension in chronic simple glaucoma. The operation was performed on a limited number of patients, but the results were not uniformly satisfactory. Since then, the procedure has been practically abandoned.

The ophthalmologist in question is perfectly correct in advising against operation, if the operation involved incision or excision of iris tissue. It is well known that, in advanced cases of simple glaucoma, any operation on the iris is frequently followed by a marked increase in the existing visual field defect so that the scotoma advances on to and over the center of fixation. But this does not hold true of cyclodialysis, which probably would be the operation of choice in this case.

TREATMENT OF SYPHILIS INVOLVING NERVOUS SYSTEM

To the Editor:—About two years ago a man, aged 50, came to me complaining of intense frontal headaches, weakness and loss of weight, and gave a history of having contracted syphilis during the Spanish-American War. He gave a 4 plus Wassermann reaction. He has had since that time twelve intravenous injections of 0.9 Gm. of neoarsphenamine at ten-day intervals, followed by twenty-four intramuscular injections of a bismuth compound every other day. Then, following one month's rest, twelve more injections of neoarsphenamine were given at ten-day intervals and twenty-four injections of a bismuth compound. Repeated Wassermann tests continue to show 4 plus reactions. I am now giving mercury inunctions and potassium iodide, 10 grains (0.65 Gm.) three times daily. The Wassermann tests remain 4 plus. The patient has gained in weight, feels fine, and is entirely free from symptoms. Will you please advise me what course I should now pursue? Please omit name.

M.D., Indiana.

ANSWER.—After the present course of inunctions is ended, a neurologic examination including spinal fluid tests, cell count, globulin tests, colloidal gold test and Wassermann and Kahn tests should be made. The history indicates that the patient had a meningeal involvement many years after infection. If the examination shows evidence pointing toward dementia paralytica tryparsamide may be given, the eyes being examined before and during the course of treatment. The tryparsamide should be alternated with mercury rubs and administration of iodides. If some other sort of central nervous system involvement is found, arsphenamine may be given, three doses in one week, the patient in the hospital in bed; or, with the patient ambulatory, three doses of neoarsphenamine may be given in one week, the dosage not exceeding 0.4 Gm. of arsphenamine or 0.6 Gm. of neoarsphenamine. Or eight doses may be given in a series, arsphenamine at weekly intervals, neoarsphenamine at five day intervals, also with the dosage limited as stated. After the intravenous series, six weeks of mercurial rubs should be given, with administration of iodides. After two weeks' rest, the treatment should be repeated.

If no signs except the serologic observations are detected, it is probably wise to lessen the strenuousness of treatment gradually, not to try to overcome the positive serum tests. These sometimes clear up more rapidly when less treatment is given, after a period of strenuous therapeutic effort. The rest periods between courses should be gradually lengthened until the patient is getting only one course a year. This should be continued for many years as a precaution against recurrence. After the first rest interval of six months another spinal fluid and neurologic examination should be made, and clinical and serologic examinations should be made every three months. During all this, particularly during heavy treatment, the general condition of the patient, his heart, kidneys and liver, should be closely watched.

TREATMENT OF FIBROUS ANKYLOSIS OF ELBOW

To the Editor:—A man, aged 25, had a streptococcic infection at the base of his left index finger for a period of five days. On the sixth day a lymphitis of the left arm occurred and the next day a painful swelling of the right elbow joint occurred and reddening, swelling and throbbing persisted for two and a half months. The arm was, of course, at absolute rest during this time so that dense fibrous tissue formed about the elbow, markedly limiting motion. There was no pus formation, but a roughening of the articular surfaces of the radius and ulna occurred. At present the temperature is normal and except for limitation of motion in the joint the patient is entirely well. What is the chance for complete recovery of function in this case? Would the injection of alkaline trypsin solution in the joint aid in fibrous dissolution? Please omit name.

M.D., Wisconsin.

ANSWER.—The question concerns the left index finger, left arm and right elbow. It makes a difference whether this is the right elbow or the left, because if it is the right it must be an infection through the blood stream; if it is the left it might have been due to direct lymphatic infection.

However, it is evidently a case of infectious arthritis with destruction of at least articular cartilage and some of the underlying bone. It is taken for granted that it is a fibrous ankylosis, which may or may not be true. It may be osseous. If it is osseous there is no injection of any kind known at the present time that is of value.

After a one-year period from the cessation of all acute symptoms, an arthroplasty by any one of the several methods, known by the names of Campbell, MacAusland or Murphy, would be indicated. Even if it were a fibrous ankylosis the injection of any solution would be contraindicated.

A full course of good common sense physical therapy over a long period should be tried. This should include radiant heat, massage of the muscles below and above the elbow, and active movements by the patient. Passive movements by the physical therapist are not so beneficial. There are many tricks or stunts used by well trained physical therapy technicians for increasing flexion and extension of the elbow.

Forcible manipulation under anesthesia should be mentioned as a possible source of improvement, although it is a two-edged sword and may be harmful.

UNDESCENDED TESTIS AND UNDERWEIGHT

To the Editor:—I am unable to find anything definite in medical literature concerning the procedure in a case such as the following: I have a brother who has a left undescended testicle lodged in the inguinal canal. He is 24 years old, 5 feet 10 inches (178 cm.) in height, and weighs only 128 pounds (58 Kg.). Despite determined efforts, he finds it impossible to increase his weight beyond this point. There is no pain at the site of the testicle. It is, however, tender to pressure, and sleeping on the left side will cause pain on arising. The right testicle is somewhat larger than normal. His general health is good. However, his extreme thinness makes him appear sickly. I would greatly appreciate answers to the following questions: 1. What are the chances of the testicle undergoing sarcomatous degeneration? 2. Is operation necessary? 3. Does the nondescent of the testicle have anything to do with his excessive thinness? Kindly omit name.

M.D., Pennsylvania.

ANSWER.—1. Malignant changes not infrequently develop in undescended testicles.

2. It would seem that in the present instance, when there is pain, a surgeon should be consulted.

3. It is hardly likely that this condition has anything to do with the patient's excessive thinness. It is suggested that a study of his food intake and of his metabolism might yield some information.

"ATMOS" NEBULIZER AND "ATMOZON"

To the Editor:—The enclosed pamphlets have been referred to me by a sufferer of asthma. He tells me that he purchased the apparatus shown in the pamphlets, including four bottles of medicine, a photograph of which is shown in the pamphlet, paying $150 for the apparatus and $2.50 per bottle for the medicine, and was told that he could not purchase the medicine unless he bought the apparatus. Mr. Theodore Radin claims to be the sole representative of the German concern that prepares this medicine and claims miraculous results for the preparation. He has succeeded in forming a society of asthmatics, the members of which are patients who have used this preparation and the apparatus. He also claims that many physicians of renown have approved the apparatus and the preparation. I find no place in the pamphlet where the proportions of the preparation are mentioned. It seems to me that Mr. Radin is making a very profitable business for himself at the expense of uninformed sufferers and making certain that he, alone, will reap the profits of the business by selling to the patients directly. He thus has a constant hold on these unfortunates, and from what I can make out he sells nothing but a preparation the ingredients of which have long been known and used by physicians in the treatment of acute attacks of asthma. May I ask, therefore, that you investigate the entire matter and make a report in THE JOURNAL for, as I understand it, many physicians are induced to buy this and recommend it to their patients.

B. P. POTTER, M.D., Secaucus, N. J.

ANSWER.—The advertising refers to the so-called new method of "inhalation therapy" by means of the "Atmos" medicament nebulizer, also referred to as the "Atmozon," and the "Silbe" inhalation preparations.

According to the advertising in THE JOURNAL files, the treatment is applied by means of a nebulizer (atomizer). The medicament is stated "usually" to contain "an extract of the suprarenal gland," that is, epinephrine.

Reference to the use of ephedrine preparations is also made in the advertising. It thus appears that the "new therapy" is nothing more than the employment of semisecret proprietaries to obtain the well known action of epinephrine and ephedrine of relieving the paroxysms of asthma when applied in the form of a spray. (Useful Drugs, ed. 8, 1930, pp. 73-74).

SIGNIFICANCE OF REPEATEDLY POSITIVE WASSERMANN TESTS

To the Editor:—Is a four plus Kahn and a positive Kolmer reaction diagnostic for syphilis without any other sign or symptom? There is no history of chancre. Can one make a diagnosis of syphilis in the presence of an old tuberculosis plus the finding of spirochetes and fusiform bacilli in the sputum? In other words, will a Vincent infection or tuberculosis give repeated positive Wassermann reactions? Please omit name.

M.D., California.

ANSWER.—Assuming that the possibility of technical errors is excluded, and in the absence of pregnancy, repeated four plus positive Kahn reactions with positive Kolmer reactions may be regarded as indicative of syphilis even if there is no history of chancre and no other signs of syphilis. Tuberculosis and so-called Vincent's infection will not give repeatedly positive Wassermann reactions.

CHOICE OF POLYCYTHEMIC PATIENT AS BLOOD DONOR

To the Editor:—I have a patient who has polycythemia. His red count is 7,000,000, with hemoglobin over 100 per cent; the leukocytes are normal. He is in good health and has a negative Wassermann reaction. I give him repeated bleedings for relief. He is a type 4 and I should like to know whether I can use this man for blood transfusions.

SOLON J. LEVINE, M.D., Grover, Colo.

ANSWER.—Because it is not known whether the blood in polycythemia may not contain substances that are injurious to other persons, it probably would be safest at present not to use the polycythemic patient as a donor in transfusion.

TUCSON VS. PHOENIX

To the Editor:—The attached clipping is from THE JOURNAL of January 9, page 164. While it is true that the U. S. Weather Bureau's figures show that the humidity in Tucson is practically the same as in Phoenix, as a matter of fact this is incorrect, and our organization is working on a plan that we believe will adjust the matter. The U. S. Weather Bureau's readings in Phoenix are taken, we are advised, on the top of a ten or twelve story building, whereas the records in Tucson are taken by the University of Arizona, on the ground, and in a location that is constantly irrigated to produce grass. There is absolutely no question that the sensible humidity, if taken where people live, which is on the ground and not on top of a ten story building, would unquestionably show far more humidity in Phoenix than exists in Tucson. We believe any one will agree that it would be impossible constantly to irrigate a half million acres of land without definitely increasing the humidity.

W. M. MCGOVERN, Tucson, Ariz.
Manager, Tucson Sunshine Climate Club.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: New Orleans, May 9. Montreal, Sept. 19. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *General Examination.* New Orleans, May 10. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: New Orleans, May 9. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARKANSAS: *Basic Science.* Little Rock, May 2. Sec., Mr. Louis E. Gebauer, 1002 Donaghey Bldg., Little Rock. *Regular.* Little Rock, May 10-11. Sec., Dr. Sam J. Allbright, Searcy. *Eclectic.* Little Rock, May 10. Sec., Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith. *Homeopathic.* Little Rock, May 10. Sec., Dr. Allison A. Pringle, Eureka Springs.

ILLINOIS: Chicago, April 12-14. Supt., Mr. Paul B. Johnson, Springfield.

MINNESOTA: *Basic Science.* Minneapolis, April 5-6. Sec., Dr. J. C. McKinley, 126 Millard Hall, University of Minnesota, Minneapolis. *Regular.* Minneapolis, April 19-21. Sec., Dr. E. J. Engberg, 524 Lowry Bldg., St. Paul.

NEBRASKA: *Basic Science.* Omaha, May 3-4. Dir., Mrs. Clark Perkins, Lincoln.

NEVADA: Carson City, May 2-4. Sec., Dr. Edward E. Hamer, Carson City.

NEW MEXICO: Santa Fe, April 11. Sec., Dr. P. G. Cornish, Jr., 221 W. Central Ave., Albuquerque.

RHODE ISLAND: Providence, April 7-8. Dir., Dr. Lester A. Round, 319 State Office Building, Providence.

KEEPING THE DOCTOR UP TO DATE*

RAY LYMAN WILBUR, M.D.
Secretary of the Interior
WASHINGTON, D. C.

Within three decades, American medicine has been made over. The commercial medical school, operated profitably on students' fees, has disappeared. The laboratory has won its way into every department of the medical school as well as the hospital. Empiricism has largely succumbed to the scientific method. The doctor who is working today with the education given him thirty years ago belongs in the antique shop. The doctor's growth must go alongside that of his profession. The doctor who does not read the current medical journals, follow the activities of the various medical societies and attend occasional clinics is not a good public servant. The doctor's life is one of clinical experiences, study and reflection, and association with his fellows. Many facilities are now required to care for the sick in a satisfactory and intelligent manner. With the telephone, the improved highways, the automobile, the trained nurse, the hospital bed, most parts of our country offer the doctor time-saving methods of caring for the sick. If the time saved goes either from day to day, or concentrated in several weeks at a time, into periods for relaxation for personal health and into opportunity for further study, great professional advances are possible.

The successful doctor is an enthusiast. If he did not love his profession the calls on him are such that his life would be one of constant annoyance, disappointment, worry and dissatisfaction. Loving his profession, he wants to do his task as well as it can be done. His mind is constantly filled with unsolved problems, with cases yet undiagnosed, with the discovery of some form of treatment that will give relief. There is always the eternal question mark of how and why confronting him. He wants the opportunity to carry these problems with him to medical societies and medical centers and to obtain solutions for them. The doctor's job is a peculiarly personal one. While he deals with physical conditions and diseases, the patient's difficulties are his real interest. He wants to help in their solution.

In the United States we have not provided such opportunities for keeping the doctor up to date as might be expected with all our wealth and our manifold medical interests. We have

*Read at the Fiftieth Anniversary Dinner of the New York Post-Graduate Medical School and Hospital, Jan. 30, 1932.

been concentrating for the last quarter of a century on the better training of men seeking the degree of Doctor of Medicine. The amalgamation of the medical schools with the universities and the installation of the scientist into the medical school have consumed most of our energy. Bringing the hospital into the medical school and conducting it on an educational basis have also reacted largely to the benefit of the undergraduate medical student. The intern year has brought into the hospital a large body of keen, active-minded young men who are enlarging their experience under the best of clinical leadership. Each year we have ripened a group of graduates better trained fundamentally in medicine but still green in the great game of the care of the sick.

There has been some attempt to give clinical experience and training to the physicians alongside the young men who were in the cub stage of medicine. We have had too few institutions concerned with offering adequate opportunities to the physician himself. There have been a certain number of doctors who received more or less training in the specialties, but we have not had in this country graduate medical centers comparable to those of some of the capitals of Europe. It has been a surprise to me in watching the developments in New York to see how long it has taken for the educational and governmental forces to grasp the importance of New York as a graduate medical center. The New York Post-Graduate Medical School and Hospital has an honorable record of fifty years of service but it has not had the backing that it should have received. Part of its history has been too personalized and it has not been sensed as a possible nucleus for a great New York institution. With the vast sums that have been spent for undergraduate medical instruction in New York for comparatively small numbers of students, a truly great graduate medical center could have been developed here. The clinical resources of Manhattan, when combined with those of Brooklyn, offer almost unlimited opportunities for graduate medical work. There is also a great pool of medical brains to draw on.

While I am deeply sympathetic with undergraduate medical school instruction, I do feel that certain cities of the United States should devote themselves to the training of physicians rather than the instruction of medical students. Experience has shown that medical students can be adequately handled in comparatively small communities and with small institutions, while only large centers can adequately deal with the difficult training of mature physicians. It is no longer effective for these physicians to come in contact with one great leader through lectures and demonstrations. That opportunity passed with the saddle bags. There is need of organization and systemization of the clinical, research and teaching opportunities. It is a great privilege for any teacher or any medical group to lead a medical student into the mazes of medicine, but it is a greater one to lead the active men and women of the profession to more adequate medical services. Apparently, now the universities here have sensed their responsibilities to our civilization in the field of medicine. Their sponsorship of graduate training will now do more than anything else to put New York where it should be as a world medical center.

It is much easier to run a group of students through a diabolical but somewhat necessary curriculum than to handle ambitious, inquiring, experienced physicians and surgeons. We know though that such work can be done and well done. The eagerness with which large numbers of physicians from all over the country gather to attend the tristate meetings shows how much has been missed in our large cities, which should be the real medical centers. I think that the doctor is ready to pay a large part of the bill if the leading institutions will provide the opportunities. We should have a series of clinics organized in various ways for different kinds of teaching.

Necessarily, the problem of training the doctor has markedly changed with the almost universal intern year. The base line from which graduate training must start has been elevated many degrees. The army and navy have shown us the way in their training schools. They had to devise special methods for this purpose and to arrange to see that periods of time were granted for the training. Certainly the general public should be able to get the services of a physician who is kept up to date. This can come about only by communities such as New York seeing their responsibility. Philadelphia has taken a whole series of steps forward and leads our country in this field. This city has good libraries, museums, hospitals and men. New York must want to be a great medical center, bringing students from all over the world in the way that Vienna has for so many years. The training of specialists can be handled on a basis distinct from that of the general training offered to the members of the profession.

The work of the Committee on the Costs of Medical Care has indicated to us the need of a better distribution of more adequate medical care along some plan that will provide satisfactory return for the physician, and also permit him to continue to improve his abilities in the field of medicine. Systematic and regular sojourns at medical centers should be a part of the life of the practitioner of the future. At least New York, Philadelphia and Chicago should possess large opportunities along this line. Boston, Baltimore, New Orleans and San Francisco, and other cities, can well use their more limited clinical facilities for some graduate instruction. I hope that the profession of this city, as well as the universities and institutions in it, will be able to get into higher gear in the field of medicine. The largest mass of human beings should provide the most opportunities for the doctor who wants to do his work better. The future of medicine and the happiness of our people depend largely on an advancing medical profession made up of men who grow each year in knowledge and capacity.

Connecticut November Report

Dr. Thomas P. Murdock, secretary, Connecticut Medical Examining Board, reports the written examination held at Hartford, Nov. 10-11, 1931. The examination covered 7 subjects and included 70 questions. An average of 75 per cent was required to pass. Twenty-three candidates were examined, 22 of whom passed and one failed. The following colleges were represented:

PASSED			
College		Year Grad.	Per Cent
Yale University School of Medicine		(1930)	77.1
Georgetown University School of Medicine		(1930)	75, 75, (1931) 75, 76.2
George Washington University Medical School		(1930)	79.1
Rush Medical College		(1930)	78.7
Johns Hopkins University School of Medicine		(1930)	78.2
University of Maryland School of Medicine and College of Physicians and Surgeons		(1931)	76.4
Boston University School of Medicine		(1931)	81.4, 82.8
Tufts College Medical School		(1930)	75.9, 77.3, 78.2, (1931) 75, 79.9
University of Michigan Medical School	(1930) 83.7,	(1931)	79.3
Long Island College of Medicine		(1931)	80.1
University and Bellevue Hospital Medical College		(1929)	82.7
Temple University School of Medicine		(1931)	79.9
Osteopath			82*

FAILED		
College	Year Grad.	Per Cent
Georgetown University School of Medicine	(1931)	68.6

Dr. Murdock also reports the oral examination for endorsement candidates held at Hartford, Nov. 24, 1931. Twenty-one physicians were examined, all of whom passed. The following colleges were represented:

LICENSED BY ENDORSEMENT		
College	Year Grad.	Endorsement of
Yale University School of Med.	(1925) N. B. M. Ex., (1926)	New York
Loyola University School of Medicine	(1918)	Illinois
University of Louisville Medical Department	(1914)	Kentucky
Johns Hopkins University School of Medicine	(1930)	N. B. M. Ex.
Harvard University Medical School	(1914),† (1923) (1924)	Mass., Maine, (1930) N. B. M. Ex.
Tufts College Medical School	(1923)	New York
University of Minnesota Medical School	(1927)	Minnesota
St. Louis University School of Medicine	(1921)	Missouri
University of Nebraska College of Medicine	(1928)	Nebraska
Cornell University Medical College	(1928)	New York
University and Bellevue Hospital Medical College	(1913)†	New York
University of Pennsylvania School of Medicine	(1926)	N. Carolina
University of Vermont College of Medicine	(1925)	N. B. M. Ex.

University of Toronto Faculty of Medicine	(1911)	California
Laval University Faculty of Medicine	(1913)	Maine
McGill University Faculty of Medicine	(1930, 2)	N. B. M. Ex.

* Licensed to practice medicine only.

† The certificates of licensure of these applicants are being withheld until permanent residence in Connecticut is established.

National Board of Medical Examiners

The National Board of Medical Examiners reports the examinations in part III held in Chicago, Minneapolis and New York in January, 1932. Of the 75 candidates examined, 67 passed and were awarded the Certificate of the National Board. The following colleges were represented:

College	AWARDED CERTIFICATES	Year Grad.	Number Passed
College of Medical Evangelists		(1931)	1
Yale University School of Medicine		(1930)	1
Loyola University School of Medicine		(1930)	1
Northwestern University Medical School		(1931, 3), (1932)	4
Rush Medical College		(1931, 2)	2
School of Medicine of the Division of Biological Sciences, University of Chicago		(1931)	1
University of Illinois College of Medicine		(1932)	1
University of Kansas School of Medicine		(1929)	1
Harvard University Medical School		(1929, 2), (1930, 3)	5
Tufts College Medical School		(1930, 2)	2
University of Minnesota Medical School		(1930, 3), (1931, 9)	12
University of Nebraska College of Medicine		(1930)	1
Columbia University College of Physicians and Surgeons		(1927), (1929, 2), (1930, 9)	12
Cornell University Medical College		(1929, 2), (1930, 2)	4
Long Island College Hospital		(1930)	1
New York Homeopathic Med. Coll. and Flower Hosp.		(1930)	1
University and Bellevue Hosp. Med. Coll.		(1929), (1930, 2)	3
University of Buffalo School of Medicine		(1929)	1
University of Rochester School of Medicine		(1929)	1
University of Oregon Medical School		(1929)	1
Jefferson Medical College of Philadelphia		(1929)	1
University of Pennsylvania School of Medicine		(1931)	1
University of Vermont College of Medicine		(1930, 3)	3
Medical College of Virginia		(1930)	1
University of Virginia Department of Medicine		(1930)	1
University of Toronto Faculty of Medicine		(1924)	1
McGill University Faculty of Medicine		(1930, 3)	3

College	FAILED	Year Grad.	Number Failed
Yale University School of Medicine		(1930)	1
Rush Medical College		(1931)	1
University of Minnesota Medical School		(1930)	1
Columbia Univ. College of Physicians and Surgeons		(1929)	1
Cornell University Medical College		(1927), (1929)	2
University and Bellevue Hospital Medical College		(1930)	1
University of Vermont College of Medicine		(1930)	1

Oregon Reciprocity Report

Dr. C. J. McCusker, secretary, Oregon Board of Medical Examiners, reports 6 physicians licensed by reciprocity with other states and 2 physicians licensed by endorsement from Sept. 28 to Nov. 19, 1931. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University Medical School		(1904)	Montana
Indiana University School of Medicine		(1930)	Indiana
Washington University School of Medicine		(1930)	Missouri
John A. Creighton Medical College		(1915)	Kansas
Columbus Medical College, Ohio		(1890)	Ohio
University of Oregon Medical School		(1926)	Washington

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Johns Hopkins University School of Medicine		(1925)	N. B. M. Ex.
University of Oregon Medical School		(1929)	N. B. M. Ex.

Kentucky December Report

Dr. A. T. McCormack, secretary, Kentucky State Board of Health, reports the written examination held at Louisville, Dec. 1, 1931. The examination covered 11 subjects and included 125 questions. An average of 70 per cent was required to pass. Two candidates were examined, both of whom passed. Two physicians were licensed by reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Rush Medical College		(1931)	88
Washington University School of Medicine		(1930)	83

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Arkansas School of Medicine		(1930)	Arkansas
Tulane University of Louisiana School of Medicine		(1922)	Louisiana

Kansas December Report

Dr. C. H. Ewing, secretary, Kansas State Board of Medical Registration and Examination, reports the written examination held at Kansas City, Dec. 8-9, 1931. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Seven candidates were examined, all of whom passed. Seventeen physicians were licensed by reciprocity with other states and 2 physicians were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Colorado School of Medicine		(1929)	92.3
Howard University School of Medicine		(1931)	87.2, 88.9
St. Louis University School of Medicine		(1931)	90.1
Creighton University School of Medicine		(1931)	90
Jefferson Medical College of Philadelphia		(1931)	89.9
University of Wisconsin Medical School		(1931)	89.9

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Hahnemann Medical College and Hospital, Chicago		(1894)	Illinois
Northwestern University Medical School		(1925), (1928)	Illinois, Michigan
Indiana University School of Medicine		(1930)	Indiana
University of Louisville School of Medicine		(1926)	Kentucky
St. Louis University School of Medicine		(1929), (1930, 2)	Missouri
University of Nebraska College of Medicine		(1925), (1930)	Nebraska
Western Reserve University School of Medicine		(1925)	Ohio
University of Oklahoma School of Medicine		(1929)	Oklahoma
Willamette University Medical Department, Oregon		(1906)	Washington
Meharry Medical College		(1930)	Tennessee
Medical College of Virginia		(1926)	Virginia
University of Bonn Faculty of Medicine, Germany		(1916)	Illinois

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
Rush Medical College		(1931)	N. B. M. Ex.
Harvard University Medical School		(1927)	N. B. M. Ex.

Missouri Reciprocity Report

Dr. James Stewart, secretary, Missouri State Board of Health, reports 11 physicians licensed by reciprocity with other states and 2 physicians licensed by endorsement, Sept. 22, 1931. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Kansas Sch. of Med.		(1917), (1927), (1930, 2)	Kansas
University of Louisville School of Medicine		(1930, 2)	Kentucky
University of Maryland School of Medicine and College of Physicians and Surgeons		(1921)	Maryland
University of Minnesota Medical School		(1931)	Minnesota
St. Louis University School of Medicine		(1927)	Kansas
Washington University School of Medicine		(1927)	Minnesota
University of Oklahoma School of Medicine		(1923)	Oklahoma

College	LICENSED BY ENDORSEMENT	Year Grad.	Endorsement of
St. Louis University School of Medicine		(1930)	N. B. M. Ex.
Jefferson Medical College of Philadelphia		(1930)	N. B. M. Ex.

Florida November Examination

Dr. William M. Rowlett, secretary, Florida State Board of Medical Examiners, reports the examination held at Jacksonville, Nov. 23-24, 1931. The examination covered 10 subjects. An average of 75 per cent was required to pass. Twenty-three candidates were examined, 19 of whom passed and 4 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
University of Arkansas School of Medicine		(1929)	85
Emory University School of Medicine		(1930)	86.3, (1931) 81.4
University of Georgia Medical Department		(1931)	80.8, 82
Chicago College of Medicine and Surgery		(1910)	78.7
Rush Medical College		(1931)	85.9
Tulane University of Louisiana School of Medicine		(1921)	85
University of Maryland School of Medicine and College of Physicians and Surgeons		(1919)	83
Boston University School of Medicine		(1931)	75
Universtiy of Minnesota Medical School		(1925)	82.9
Medico-Chirurgical College of Kansas City, Missouri		(1901)	84.3
Hahnemann Med. College and Hospital of Philadelphia		(1896)	75.2
Jefferson Medical College of Philadelphia		(1930)	82.5, (1931) 88.6
Medico-Chirurgical College of Philadelphia		(1901)	86.3
Medical College of the State of South Carolina		(1931)	80.1
Medical College of Virginia		(1926)	82.1
University of Virginia Department of Medicine		(1931)	88.5

College	FAILED	Year Grad.	Per Cent
University of Georgia Medical Department		(1913)	64.7
Detroit College of Medicine		(1904)	61.4
Saginaw Valley Medical College, Michigan		(1899)	60
Medical College of Virginia		(1900)	59

Book Notices

The Intervertebral Discs: Observations on Their Normal and Morbid Anatomy in Relation to Certain Spinal Deformities. By Ormond A. Beadle. Medical Research Council, Special Report Series, No. 161. Paper. Price, 2s. Pp. 79, with 47 illustrations. London: His Majesty's Stationery Office, 1931.

This was published under the auspices of the Medical Research Council of London. The author was a traveling fellow sponsored by the Radcliffe fellowship. To the student of back and spinal conditions, it is a welcome addition to the literature. It gives information concerning that important but much neglected structure known as the intervertebral disk. The book reflects the teaching of the Dresden pathologist Schmorl, who made observations on more than 7,000 spines examined grossly and microscopically at necropsy. The literature on this subject is scanty. Most of the contributions have come from Schmorl's clinic. There is little literature on this subject in English, wherefore this monograph is more highly acceptable than would ordinarily be considered. The intervertebral disk is undoubtedly an important factor in such conditions as defective posture, scoliosis, epiphysitis, arthritis, compression fracture of the spine, dislocation of the spine, tuberculosis of the spine and osteomalacia. This short monograph professes to be not merely a summary of Schmorl's published works but a description of things actually seen. Much of it is first-hand description; the author has had the specimens before him and given his own account. This has always been carefully compared with Schmorl's descriptions and been checked. The theoretical considerations are necessarily in part the author's interpretations of Schmorl's ideas, as in many cases they have not been expressly set down by him and appear here for the first time, it is believed, in greater clarity. The ideas are, however, authorized and purport to reproduce the essentials of Schmorl's own interpretations.

The observations will be readily visualized when the growing vertebral body is looked on as a drum fitted at each end with a cap of cartilage whose rim projects well over the edge. The inner surfaces of the caps are radially fluted, and in each fluting appears at a certain age a center of ossification. The flutings fit accurately into grooves on the end-surfaces of the bone, and, as growth proceeds, the flutings and the whole rim are converted into bone, which as a complete ring ultimately fuses with the edges of the drum. The central part, the crown of the cap, remains cartilaginous to the end as the cartilage plate of the intervertebral disk, and up to the closure of the growth period supplies the endochondral bone-forming layer by which the vertebral body increases its length. The fibers of the annulus lamellosus receive their firmest attachment to this bony rim, which is the epiphyseal ring, the *randleiste* of the German pathologists.

The author states that the spine is the first organ in the body to undergo the degenerative changes of age. In this respect it is not surpassed by the intima of the great arteries.

The chief forces to be withstood by the human spine are two, both of them severe in men whose occupations involve strong bodily work; pressure, mostly intermittent in the form of powerful mechanical shocks in a vertical direction, and tension. The first acts mostly on the broad surfaces of the vertebral bodies and is transmitted and distributed by the spring-like nuclei pulposi; the second is a result of all kinds of flexion and torsion whose burden is carried by the strong fibrous bands of the annulus fibrosus. The most conspicuous difference in the old or middle aged as compared with the adolescent and youthful spine is the far inferior elasticity and softness of the intervertebral disks. With increasing age the disk, especially the nucleus pulposus, seems to lose its fluidity and become gradually desiccated and solid.

The author concludes with the following statement: The great lesson from all these observations is the all importance of the intervertebral disks in the preservation of the normal form of the spine during the infinite changes of shape, the compressions, extensions and torsions it undergoes in functional life. How severe this task is is proved by the exceeding readiness with which the disks yield to senile changes, long before these appear in other tissues; and when this has happened the whole spine shows itself as functionally exhausted and rapidly gives under the strain, becoming stiff and permanently deformed.

The illustrations are of the highest quality from the standpoint both of reproduction and of teaching purposes. This inexpensive book should be in the hands of every pediatrician, internist, orthopedic surgeon, industrial surgeon and roentgenologist.

Phylaxis. By the late G. Billard, M.D. Translated by H. Gainsborough, M.D., F.R.C.P., Physician to St. George's Hospital, London. Cloth. Price, $3. Pp. 77. New York: Macmillan Company, 1931.

This posthumous publication is an important contribution, especially for the research student, as it opens a new path in the study of the protection conferred on the nervous system by various neurotropic substances against one another. The shepherds of Auvergne had observed that the sheep, browsing in the early spring on the broom tops peeping above the snowy carpet, not only became slow in their movements (because of sparteine poisoning) but during this time were apparently immune to viper's venom. The impressions of the peasants, verified by laboratory experiments on guinea-pigs by the author, started him to work on the thesis that when one poison with selective affinity on the nervous system becomes fixed in the lipoids of the nerve cells, others of feebler affinity cannot displace it and reach their goal. Further studies suggest that this displacement occurs in accordance with the relative affinities of the substances for the lipoids or soaps of the nervous system: that a substance of powerful affinity, such as chloroform, may not only prevent the fixation of a poison, such as sparteine, venom, diphtheria or tetanus toxin, during its presence in the body—this protection being, therefore, of but short duration—but may actually displace enough such poison from its union with the nerve cell to permit simultaneously administered tetanus or diphtheria antitoxin to save the life of otherwise fatally poisoned guinea-pigs. These observations justify, in the author's opinion, the use of anesthesia in the treatment of tetanus and severe cases of diphtheria in conjunction with large doses of antitoxin [possibly the value of phenol in tetanus might be explained in the same way]. Similarly, phenobarbital protects against tetanus toxin and viper's venom; and neurotoxins against one another. The author also finds that neurotoxins are inactivated by certain mineral waters, an effect which he ascribes to the affinity of certain ions of the mineral waters for palmitates for which the neurotoxins exhibit a selective affinity. It is to be regretted that Billard saw fit to apply the term "phylaxis" to this chemical affinity phenomenon of the nervous system, when Almroth E. Wright (*Lancet*, Dec. 24, 1927) advocated the use of this term and derivatives of it to designate the antibacterial powers of the system. It is indeed time that the closer bond between British and French men of science be established, which is aimed at by the Anglo-French Library of Medical and Biological Science, publishers of this little volume.

Protoplasma-Monographien. Herausgegeben von R. Chambers et al. Volume V: La physico-chemie de la sexualité. Par Ph. Joyet-Lavergne, professeur au Lycée Condorcet. Avec une préface du Professeur d'Arsonval. Cloth. Price, 32 marks. Pp. 457, with 12 illustrations. Berlin: Gebrüder Borntraeger, 1931.

The title of this book is misleading because the material presented does not involve a physicochemical analysis of sexuality, although the author apparently considers his method of attack sufficiently accurate and critical from a physicochemical point of view to warrant the interpretations he has made. The question of sexuality cannot as yet be treated from such a point of view but rather on a more biologic basis with attempts at correlating the scanty and, many times, exceedingly inaccurate biochemical information into this involved question. The main theses the author wishes to defend or establish are, first, that the origin of sex is not determined or influenced entirely from without or from within; second, that the control from within is not primarily of hormone nature; and, third, that the "physicochemical" studies on the various aspects of the problem nevertheless lead to a general conception of the phenomenon of sexuality. He refers to the differences in metabolism which are in part influenced by environmental and exterior nutritional conditions but concludes that in the main this metabolic gradient is determined by the somatic character of the cells. The chap-

ter devoted specifically to the consideration of the gonads as hormone producers is remarkably incomplete and noncritical. It is rather striking to find that the author considers the evidence advanced by Brown-Séquard in 1889 and the work by Voronoff as conclusive proofs of an internal secretion by the testes, whereas he does not refer to the much earlier and more convincing work by Hunter or by Berthold. This is all the more remarkable in view of the fact that these earlier workers actually proved the relation of the testes to secondary sex characters. So also the uncertain and unconfirmed results reported by Busquet and the "all or none" law of Pezard are cited without a word of criticism. In spite of the great mass of excellent biologic and chemical work on the estrus-producing and comb-growth-stimulating hormones, not a word is written about it. In a chapter on physicochemical sex differences an attempt is made, with appropriate admission of the possible doubtful value of some of the data, to correlate with sex such chemical constants as protein and hemoglobin content of blood, the lipoid and catalase content of blood and tissues, and a great variety of other studies. The Manoiloff reaction and its numerous modifications are discussed in detail and the final conclusion is offered that it is in a sense a measure of the glutathione content. The general conclusion is again emphasized that the oxidation-reduction potential is determined by the glutathione concentration and this thus controls metabolic activity. He then formulates his two laws of sexuality. These are, first, that the intracellular oxidation-reduction potential values in a given species are related to the sexuality of the cytoplasm and that cells which are "female polarized" have a lower oxidation-reduction potential than those of "male polarity" and, second, that these differences are in part due to differences in reserve lipin and fat contents as shown by the osmic acid reducing power of the accumulated lipins in cells of "female polarity." He considers that these laws apply in the broadest and most general sense to all plants and animals and to all grades of sexuality, including hermaphrodism. Even change of sex is due to changes in the basal metabolic rate because the factors, external or internal, which cause the change in sex always cause a change in basal metabolic rate. He does not seem to raise the question that a change in metabolic rate may not result in change of sex or the possibility that change in sex, due to whatever cause, may cause the change in metabolic rate which he has observed. The monograph is valuable because one finds here an attempt at collecting many of the studies involving various phases of the question of sex, but the treatment is not as critical chemically as one might expect from the impressive title. A good alphabetically arranged bibliography, an index of the Latin names of genera and species, and an author index occupy the last sixty-two pages of the work.

The Practice of Contraception: An International Symposium and Survey. Edited by Margaret Sanger and Hannah M. Stone, M.D. With a foreword by Robert L. Dickinson, M.D. From the proceedings of the seventh International Birth Control Conference, Zurich, Switzerland, September, 1930. Cloth. Price, $4. Pp. 316, with illustrations. Baltimore: Williams & Wilkins Company, 1931.

Control of Conception: An Illustrated Medical Manual. By Robert Latou Dickinson and Louise Stevens Bryant. Medical Aspects of Human Fertility Series Issued by the National Committee on Maternal Health, Inc. Cloth. Price, $4.50. Pp. 290, with 72 illustrations. Baltimore: Williams & Wilkins Company, 1931.

These volumes represent much of the current scientific interest in contraception. The first book provides an evaluation of various methods as brought out in the international conference held in Zurich in September, 1930, in which leaders in such investigations from all over the world took part. The various considerations of the subject included a symposium on contraceptive methods, another on abortion, and a third providing reports from the various birth control clinics of the world. The methods involved included occlusive pessaries, rings, chemicals, biologic methods, sterilization, and methods used before these modern innovations were brought to light. Obviously, there is a gradual change in the point of view relative to birth control throughout the world. It is reasonable to believe that continued study from a scientific point of view will lead to additional modifications. The method most commonly employed is the diaphragm, generally in conjunction with some ointment. It was also the unanimous opinion of the experts that the so-called stem pessary is dangerous and should be eliminated. It was the general impression that some safe and satisfactory biologic methods will probably be developed in the future. In the meantime, experimentation and investigation are being continued with the likelihood of possible success in the near future, now that such investigations are being taken out of the realm of disrepute and into the field of science.

The second volume is distinctly a medical publication and is concerned with the scientific background, the technic of contraception, sterilization, medical indications, the legal point of view, and the outlook for the future. Dr. Dickinson has had a wide experience in this field. His work is scientific and is not to be confused in any way with various sensational contributions by fanatical propagandists or hysterical ladies.

Hautkrankheiten und Ernährung mit Berücksichtigung der Dermatosen des Kindesalters. Von Dr. Erich Urbach, Privatdozent für Dermatologie an der Universität Wien. Cloth. Price, 20 marks. Pp. 260, with 55 illustrations. Vienna: Wilhelm Maudrich, 1932.

In his preface, the author suggests that perhaps the reason the medical profession has been so slow to put to practical use the present-day knowledge of dietotherapy is that there has been as yet no comprehensive presentation of the subject. So far as it relates to dermatology, he proposes to do this and he succeeds admirably.

The first part treats of the influence of nutrition on the chemical composition of the skin, in contradistinction to that of the blood, and of nutritional influence on the biologic reactions of the skin. Various nutritional defects as the cause of skin disease are next considered, general undernourishment, excess or deficiency of the various vitamins, and excess of salt, flour or milk. The next chapter treats of skin disease due to alimentary infections or intoxications, functional disturbances or disease of the alimentary tract and their dietetic management. A discussion of dermatoses due to pathologic metabolism follows and, last in the general part of the work, chapters on food idiosyncrasies as the cause of disease of the skin and mucous membranes. This is the climax of the book, setting forth the author's views and those of other authorities on allergy and an excellent dissertation on methods of diagnosis and treatment of these difficult dermatoses. Among other methods, the author's specific propeptone method is expounded, Luithlen being given credit as the founder.

The second part of the book discusses the various dermatoses and their dietetic treatment. These chapters, so useful for direct reference on specific subjects, have been treated with as good judgment as that used in the preceding general discussion. This is sufficient praise.

The appendix contains two tables with directions for practical application. The first is a table of normal infant weights, after Pirquet. The other is a table of foods after Schall, giving the proportion of the various constituents and the calories in 100 Gm. of each food.

The only adverse criticism is the difficulty, for American readers, of getting any information from the occasional reference to European proprietary medicines. For those who do not read German, an English translation is on the way and if the translator can make these references to drugs understandable, he will do a distinct service to the author as well as to his American readers.

The book is timely, thorough, written in a clear style by a master of the subject and can be highly recommended to the general practitioner and other specialists as well as to the dermatologist.

Nucleic Acids. By P. A. Levene, the Rockefeller Institute for Medical Research, and Lawrence W. Bass, Assistant Director of Research, the Borden Company. American Chemical Society Monograph Series, No. 56. Cloth. Price, $4.50. Pp. 337, with 14 illustrations. New York: Chemical Catalog Company, Inc., 1931.

The subject matter in this monograph is presented in an entertaining, systematic and accurate style and from the historical point of view because, as the authors state in their preface, the progress in our knowledge on nucleic acids is largely through "paths of error and controversy" and that "it would be an injustice to many if the monograph contained only the views that seem correct today." All the essential details on the chemistry of carbohydrates, imidazole, pyrimidine bases, purine bases, and so on through the more complex units to

the true nucleic acids are taken up in a uniformly systematic manner. Each chapter is devoted first to the organic chemistry of the group or individuals of the group; then follow the methods of preparation, specific properties, methods of separation, and the analytic and synthetic methods. The work of the master mind and hands is obvious throughout the monograph. The structural formulas are presented clearly with Roman numerals for the text references. Naturally, the subject matter is brought down to recent times, so that the new work on desoxyribosides, methylthiopentosides and the more complex polynucleotides is included. The authors appear to have some doubt as to the certainty of the separation of a 5-methylcytosine from tuberculinic acid. The physicochemical studies by Hammarsten and others on the polynucleotides are presented clearly. The book closes with a chapter on nucleases. Extensive author and subject indexes are included.

Zehn Jahre Forschung auf dem physikalisch-medizinischen Grenzgebiet. Bericht des Institutes für physikalische Grundlagen der Medizin an der Universität Frankfurt am Main. Herausgegeben von o. ö. Prof. Dr. Friedrich Dessauer, Direktor des Institutes. Cloth. Price, 36 marks. Pp. 403, with 191 illustrations. Leipzig: Georg Thieme, 1931.

This publication, celebrating the tenth anniversary of the founding of the Institute for the Physical Basis of Medicine, may be divided into two sections—the first a general and historical account of the institute, and the second comprising the scientific papers, fifteen in all, partly original contributions in minute detail, and partly summarizations of papers published in other journals of the work of present and former members of the institute. The most important disclosure is that concerning the physiologic effect of unipolar charged air. This work is the result of ten years of research and experimentation. In this work the effect on normal subjects and selected patients, of air carrying a measured quantity of either positive or negative ions, is set forth. These studies were suggested by observations on atmospheric susceptibilities of various individuals when subjected to change of altitude and exposure to various winds, and also by the dependence of rheumatic manifestations on weather and climate. The work strongly indicates that the quantity and charge, together with the character of charge, whether positive or negative, are important factors in determining the physiologic effect of climatic conditions. When the subject is supplied with air containing negatively charged particles, a fall of blood pressure is noted, particularly in patients having abnormally high blood pressure. This fall in blood pressure is invariably accompanied by relief of subjective symptoms. In normal subjects, a feeling of freshness and absence of fatigue is noted, when the air is negatively charged. In cases of subacute and chronic rheumatism, relief was frequently, though not invariably, obtained when the patient was supplied with air containing a preponderance of negative ions. When the air was preponderantly positively charged, untoward symptoms occurred in patients with raised blood pressure and often marked distress was associated with a further rise in blood pressure. The work also considers the detection and measurement of the mitogenetic rays of Gurwitsch, together with measurements of transmission of radiation through the skin and tissues as well as the intensity distribution in the irradiated mediums. Rather complete investigation has been made of both old and new apparatus for the measurement of radiation of various characters and wavelengths, and these considerations are set forth in minute detail.

Manual for the Jewish Diabetic. By William S. Collens, B.S., M.D., Assistant Chief, Diabetic Clinic, United Israel Zion Hospital. Foreword by Henry Joachim, M.D., Clinical Professor of Medicine, Long Island College of Medicine, Brooklyn, N. Y. Cloth. Price, $2. Pp. 138, with 23 illustrations. New York: Bloch Publishing Company, 1931.

This small volume is divided into thirteen short chapters. It is intended primarily for the lay diabetic patient of Jewish faith but differs only from other diabetic manuals by presenting some recipes typical of the Jewish dietary. The first half of the book is devoted to a discussion of diabetes—its symptoms, causes, detection, treatment and hazards. These discussions are brief and clear. The physician or medical student will appreciate them much more than the layman, for whom they are technical. In a work of this type, a work for a patient, discussions as to the available carbohydrate from fat and protein, and the ketogenic antiketogenic ratio seem to be out of place. The directions for the detection of sugar and ketone bodies in the urine can be simplified, and the quantitative determination omitted, as all such details burden the patient. The directions for the use of insulin are clear. The various recipes and tables are carefully prepared and the book is amply illustrated. Unfortunately, the expression is not always clear to the layman, for whom it was designed.

Atlas du cancer: Les tumeurs des centres nerveux et des nerfs périphériques. Par Gustave Roussy et Charles Oberling. Neuvième et dixième fascicules. Fondation Henri de Rothschild. Association française pour l'étude du cancer. Paper. Price, 80 francs. No pagination, 12 plates. Paris: Félix Alcan, 1931.

With the advent of neurosurgery, the teaching of tumors of the brain and spinal cord came to be not only of academic but also of practical interest. Unfortunately, their classification and nomenclature are so confused that it is sometimes almost impossible to become oriented, for several names are given the same type of tumors, or various tumors bear the same name. As such a confusion exists also in other organs, the French Association for Study of Cancer set itself the task to simplify and unify the classification of tumors by means of pictures obtained with ordinary technic. The present volume, for instance, is a small portion of the association's work representing an atlas of the most important tumors of the brain, spinal cord and peripheral nerves. The atlas consists of twelve large plates, nearly all in colors. The description is brief but clear, exact and plain, with frequent excursions into the fields of cerebral histology and embryology of the central nervous system. Roussy and Oberling recognize in their atlas five types of tumors—gliomatous and their subdivisions, ependymal, ganglioneuromas, neurospongiomas (commonly known as spongioblastomas) and neuro-epitheliomas. Of the peripheral nerve tumors, neurinomas are mainly pictured; malignant tumors of the central nervous system are not mentioned at all, while meningeal tumors will be taken up in a separate volume. It is unquestionably a practical and useful contribution to the phase of neuropathology that deals with the difficult subject of tumors.

X-Ray Studies in Advanced Radiographic Technic: Selected Articles by Members of the Educational Department, X-Ray Section General Electric X-Ray Corporation. Leatherette. Price, $2. Pp. 119, with illustrations. Chicago: General Electric X-Ray Corporation, 1931.

This is made up of a group of selected articles or studies, each complete in itself, concerning technical advances in eight of the regions of the body which present difficulties to most technicians from the standpoint of securing the best diagnostic value in the film. The articles are well illustrated, and details of technic are freely given. A study of the volume can hardly fail to stimulate the radiologist and his staff to secure better technical results. The last chapter, on foreign body localization, could be somewhat simplified and clarified by a few explanatory drawings and photographs so that fluoroscopy could sometimes supplant the roentgenographic method.

Archiv und Atlas der normalen und pathologischen Anatomie in typischen Röntgenbildern. Maligne Pharynx- und Larynxtumoren: Zürcher Erfahrungen. Von A. Zuppinger. Mit einem Geleitwort von H. R. Schinz. Fortschritte auf dem Gebiete der Röntgenstrahlen, Ergänzungsband XL. Herausgegeben von Prof. Dr. Grashey. Paper. Price, 28 marks. Pp. 188, with 51 illustrations. Leipzig: Georg Thieme, 1931.

After considering the normal anatomy and histology of the larynx and pharynx, and the gross and histologic characteristics of the malignant lesions affecting them, the author analyzes the technic employed and the end results achieved in 280 cases treated between 1919 and 1928. The results of the last five years are distinctly better than those of the first half of the decade under investigation. The operable cases were treated surgically, and in a small percentage by a combination of surgery and radiation. Radium was used in some cases. Coutard's method of irradiation as developed at the Paris Radium Institute under the leadership of Regaud was the favored technic employed by the Zurich clinic. The statistical report of the survivals does not encourage too much optimism, but it is a hopeful sign that the failures are so carefully analyzed. It may be said that a distinct advance has been made in the battle against malignant diseases.

Medicolegal

Eugenic Sterilization Statute Valid

(State v. Troutman (Idaho), 299 P. 668)

The state board of eugenics of Idaho, after a hearing on the facts, found that Troutman was afflicted with congenital feeblemindedness and recommended his sterilization by vasectomy. The district court, after a hearing, entered judgment sustaining the board's recommendations. An appeal was taken to the Supreme Court of Idaho challenging the constitutionality of the law under which this action was taken.

The constitutionality of the statute was attacked first on the ground that it was in conflict with the Constitution of Idaho, which guarantees life, liberty, and the pursuit of happiness and safety, and in conflict with the similar guaranty in the Fourteenth Amendment to the Federal Constitution. The Supreme Court of Idaho, however, was in accord with the view of the Supreme Court of the United States which, in considering a similar sterilization law of Virginia, held that it is a reasonable act, protective of the general welfare, within the police power of the state, and not in contravention of constitutional guarantees. *Buck* v. *Bell*, 274 U. S. 200, 47 S. Ct. 584, 71 L. Ed. 1000. It was then urged that the Idaho statute contravened the provision of the state constitution prohibiting cruel and unusual punishment. This contention the Supreme Court met with the statement that the operation known as vasectomy is not usually considered cruel or inhuman and that under the Idaho law it is not performed as a punishment. The due process of law provisions of the constitution were then invoked against the statute. The court held, however, that proceedings under the act are in no sense criminal proceedings and that every safeguard known to a regular and orderly hearing in a court, with right of appeal, is afforded. Unless the person on whom the operation is to be performed, or some one duly empowered to act on his behalf, gives written consent to the operation, it cannot be performed without a complete, open, judicial proceeding. The constitutionality of the act was attacked furthermore on the ground that it violates the provisions of the constitution segregating the departments of government, in that it undertakes to delegate judicial powers to an executive board, the state board of eugenics. The findings and conclusions of the board, said the court, are only recommendatory. The person concerned may or may not give written consent thereto. If written consent is not given, then the board of eugenics must proceed in court, where a purely judicial proceeding is had, with complete final determination of all right in the courts. The proceedings of the board, the court held, do not infringe on the province of the judicial department. It was urged further that the act is unconstitutional because it does not afford equal protection of the law and is discriminatory. This contention, however, the Supreme Court denied. The sterilization acts of some states have been held unconstitutional because they applied only to the inmates of the institutions of the state, but in *Buck* v. *Bell* the courts of Virginia and the Supreme Court of the United States held that even that restriction did not render the law unconstitutional, the Supreme Court of the United States saying: "The law does all that is needed when it does all that it can, indicates a policy, applies it to all within the lines, and seeks to bring within the lines all similarly situated so far and so fast as its means allow." In any event, any objection raised against the statutes of other states based on their supposed limitation to the inmates of state institutions does not apply to the Idaho statute, since it covers all persons within the class defined by it, whether in state institutions or not.

On behalf of Troutman it was argued that the Idaho statute is theoretical and not practical, and consequently not positively and safely within the police powers of the state. It is therefore, it was claimed, an unwarranted interference with personal liberty. In support of this argument it was asserted that modern scientists are not fully agreed on the law of heredity and that so-called eugenic enthusiasts are not agreed on how far the law should interfere with natural selection. But, said the Supreme Court, we are administering a fixed and definite law and are concerned only with the statute before us, not with what future legislatures may do nor what political enthusiasts may try to do. The record before the court and the recognized authorities on the scientific questions involved leave no doubt that heredity plays a controlling part in the blight of feeblemindedness. If there is any natural right for natively mental defectives to beget children, that right must give way to the police power of the state in protecting the common welfare so far as it can be protected, against this heredity type of feeblemindedness.

The judgment of the district court, sustaining the recommendations of the state board of eugenics, was affirmed.

Limitation of Actions for Malpractice

(Barnhoff v. Aldridge (Mo.), 38 S. W. (2d) 1029)

The plaintiff's family physician told her that she had gallbladder trouble. Later he decided that the removal of her gallbladder was urgent and she was taken to a hospital. There the physician-defendant was called in, July 9, 1923, and according to the complaint filed by the patient orally contracted with her to perform the operation. On Aug. 22, 1923, he operated, but, according to the complaint, instead of performing the operation he had agreed to perform he undertook to "lift" one of the plaintiff's kidneys. For disability and suffering attributed to this alleged breach of duty, the plaintiff entered suit in the circuit court, Cole County, in the June term, 1927, about four years after the alleged breach. The trial court sustained a demurrer by the defendant, which averred that the plaintiff's cause of action, if any, was barred by the statute of limitations. The plaintiff appealed to the Supreme Court of Missouri, Division No. 1, where the order of the trial court was affirmed.

Under the laws of Missouri "all actions against physicians, surgeons, dentists, roentgenologists, nurses, hospitals and sanitariums for damages for malpractice, error, or mistake shall be brought within two years from the date of the act of neglect complained of." Rev. St. 1929, Section 864. The patient contended, however, that her action was not an action for damages for "malpractice, error or mistake," but an action for the breach of an express contract, and that therefore the statute of limitations relating specifically to malpractice actions was not applicable. We observe, said the court, that the plaintiff has omitted the allegations usually made in a malpractice case as to negligence or lack of skill. The nature of a charge of malpractice, however, is not changed by failing to state it in detail or by putting it in language suitable to the statement of a cause of action on contract. Although the petition alleged an express contract between the parties, the gist of the action was the physician's alleged wrongful act. The limitation is determined not by the form of the action but by its object. The improper performance by the physician of the duties devolving on him, whether they arise under a relationship based on either an express or implied contract or under the obligation imposed by law because of the mutual relationship of physician and patient, whereby the patient is injured in body and health, is malpractice. Any action for damages, based on such an improper act, regardless of the form of the action, comes within the inhibition of the two year statute of limitation.

Admissibility of Dying Declarations in Proceedings to Revoke Physician's License.—The department of public welfare, after due notice and hearing, revoked Lake's license to practice medicine, for procuring a criminal abortion. The district court for Douglas County affirmed the order of the department, and Lake appealed to the Supreme Court of Nebraska. He insisted that both the department and the trial court erred in admitting in evidence testimony as to alleged dying statements made by the patient, covering the circumstances leading to her death. Dying declarations, he contended, are admissible only in criminal prosecutions charging manslaughter or murder, and are not admissible in civil proceedings. It may be granted, said the Supreme Court, that ordinarily such evidence is admissible only in criminal cases. According to articles in 10 Boston University Law Review, 470, and 9 Oregon Law Review, 174, however, there is a drift in recent years to greater liberality in the admission of such statements, on the theory that the probative force of a dying declaration should be no greater in a prosecution for homicide than in a civil action for wrongful death growing out of the same facts. In Oregon and Kansas, dying declarations are

admissible in civil cases as well as in criminal cases. In Massachusetts, Missouri, New York, Ohio, Pennsylvania and North Carolina, such declarations are admissible in certain forms of civil actions. As was said in 3 Wigmore, Evidence (2d Ed.), 164: "In several jurisdictions the aid of the legislature has been invoked to stop the further defiance of common sense by the courts over such monstrous trivialities, and to admit dying declarations in charges of abortion and related offenses." It should be noted that this case was before the trial court as an equity matter, and it has been frequently held in Nebraska that it is unnecessary in reviewing such cases for the Supreme Court to pass on assignments of error in the admission of evidence; it will not be presumed that the trial court acted on and considered incompetent evidence, and the action of that court in admitting evidence will not be reviewed. In any event, the Supreme Court was satisfied that the defendant had brought about the criminal abortion, and affirmed the order revoking the defendant's license to practice medicine.—*State ex rel. Sorensen, Atty. Gen. v. Lake (Neb.), 236 N. W. 762.*

Workmen's Compensation Acts: Compensation for Nervous and Mental Sequelae.—Malingering is not compensable, and courts should scrupulously protect employers from such fraud and imposition. On the other hand, disabling residual mental and nervous affliction caused by an industrial accident should not be allowed to fall wholly on employees and their families, or on the public, when the workmen's compensation act requires industry to bear a share of the burden. Even conceding that there is no evidence of structural change in the back or spine of the claimant as the result of his accident, and nothing to indicate structural changes in the brain or nerves, it is fair from the evidence to infer that the mental and nervous consequences of that accident still remain. The Supreme Court of Iowa therefore affirmed an award under the workmen's compensation act, in favor of the employee, quoting *Eaves* v. *Blaenclydach Colliery Co.* (1909) 2. K. B. 73, C. A., as follows:

> The effects of an accident are at least twofold; they may be merely muscular effects—they almost always must include muscular effects—and there may also be, and very frequently are, effects which you may call mental, or nervous, or hysterical, whichever is the proper word to use in respect to them. The effects of this second class, as a rule, arise directly from the accident from which the man suffered just as much as the muscular effects do, and it seems to me entirely a fallacy to say that a man's right to compensation ceases when the muscular mischief is ended, though the nervous or hysterical effects still remain.

—*Lincoln Telephone & Telegraph Co. v. Smith (Neb.), 236 N. W. 437.*

Workmen's Compensation Acts: Liability of Employer for Physician's Malpractice.—Under the workmen's compensation act of Oklahoma, an employer is liable for all the legitimate consequences following an industrial accident, including unskilfulness or error of judgment of the physician furnished by him as required by the act. The employee is entitled to compensation in proportion to his disability, based on the ultimate result of the accident, regardless of the fact that that disability has been aggravated and increased by the intervening negligence or carelessness of the physician selected by the employer. In the absence of substantial evidence to the contrary, it will be presumed that the condition of the injured employee was not occasioned by any wilful intention on his part to bring about the injury to himself.—*Barnsdall Refining Co. v. Ramsdall (Okla.), 299 P. 499.*

Evidence: Necessary Elements of Dying Declaration.—A statement made by a person who is near to death and who has since died, concerning the cause of his death or any of the circumstances that result in it, is admissible in a criminal prosecution for causing his death, if it appears (1) that when the statement was made the declarant was in actual danger of death and had given up all hope of recovery, (2) that the contained statements are such as the deceased could have made if testifying as a witness, and (3) that such statements tend to prove the fact of the crime, the identity of the criminal, and other facts relevant to the death. A dying declaration may properly take the form of questions and answers. The presence or absence of the accused when the dying declaration was made is of no significance.—*State v. Manganella (Conn.), 155 Atl. 74.*

Society Proceedings

COMING MEETINGS

American Medical Association, New Orleans, May 9-13. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

Alabama, Medical Association of the State of, Mobile, April 19-22. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association for the Study of the Feeble-Minded, New York, May 25-28. Dr. Howard W. Potter, 722 W. 168th Street, New York, Secretary.

American Association for Thoracic Surgery, Ann Arbor, Mich., April 18-20. Dr. Duff S. Allen, 3720 Washington Blvd., St. Louis, Sec'y.

American Association of Genito-Urinary Surgeons, Niagara Falls, Ontario, Canada, May 26-28. Dr. Henry L. Sanford, 1621 Euclid Avenue, Cleveland, Secretary.

American Association of Pathologists and Bacteriologists, Philadelphia, April 28-29. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.

American Bronchoscopic Society, Atlantic City, May 21. Dr. Richmond McKinney, 899 Madison Avenue, Memphis, Tennessee, Secretary.

American Climatological and Clinical Association, Atlantic City, May 5-7. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Mass., Secretary.

American College of Physicians, San Francisco, April 4-8. Mr. E. R. Loveland, 133 South 36th Street, Philadelphia, Executive Secretary.

American Dermatological Association, Havana, Cuba, May 3-5. Dr. William H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.

American Gastro-Enterological Association, Atlantic City, May 2-3. Dr. Charles G. Lucas, 307 West Broadway, Louisville, Secretary.

American Heart Association, New Orleans, May 10. Dr. Irl C. Riggin, 450 Seventh Avenue, New York, Executive Secretary.

American Laryngological Association, Atlantic City, May 19-21. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, May 23-25. Dr. Robert L. Loughran, 33 East 63d Street, New York, Secretary.

American Otological Society, Atlantic City, May 17-19. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.

American Pediatric Society, Rochester, Minnesota, May 26-28. Dr. Hugh McCulloch, 500 South Kingshighway, St. Louis, Secretary.

American Physiological Society, Philadelphia, April 28-30. Dr. Arno B. Luckhardt, 5216 Greenwood Avenue, Chicago, Secretary.

American Proctologic Society, Memphis, May 6-7. Dr. Curtice Rosser, 710 Medical Arts Building, Dallas, Texas, Secretary.

American Society for Clinical Investigation, Atlantic City, May 2. Dr. Cyrus C. Sturgis, Simpson Memorial Institute, Ann Arbor, Mich., Secretary.

American Society for Experimental Pathology, Philadelphia, April 28-30. Dr. C. Phillip Miller, Jr., University of Chicago, Chicago, Secretary.

American Society for Pharmacology and Experimental Therapeutics, Philadelphia, April 27-30. Dr. V. E. Henderson, University of Toronto, Toronto, Secretary.

American Society of Biological Chemistry, Philadelphia, April 28-30. Dr. H. B. Lewis, University of Michigan Medical School, Ann Arbor, Secretary.

American Society of Clinical Pathologists, New Orleans, May 6-9. Dr. A. S. Giordano, 531 North Main Street, South Bend, Ind., Secretary.

American Surgical Association, New Haven, Conn., May 16-18. Dr. Vernon C. David, 59 East Madison Street, Chicago, Secretary.

American Therapeutic Society, Baltimore, May 16-17. Dr. Grafton Tyler Brown, 1801 I Street N.W., Washington, D. C., Secretary.

Arizona State Medical Association, Globe, April 21-23. Dr. D. F. Harbridge, 822 Professional Building, Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 5-7. Dr. William R. Bathurst, 814 Boyle Building, Little Rock, Secretary.

Association for the Study of Internal Secretions, New Orleans, May 9-10. Dr. F. M. Pottenger, 1930 Wilshire Boulevard, Los Angeles, Secretary.

Association of American Physicians, Atlantic City, May 3-4. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.

California Medical Association, Pasadena, May 2-5. Dr. Emma W. Pope, 450 Sutter Street, San Francisco, Secretary.

Connecticut State Medical Society, New Haven, May 25-26. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

District of Columbia, Medical Society of the, Washington, D. C., May 4-5. Dr. C. B. Conklin, 1718 M Street, N. W., Washington, D. C., Secretary.

Florida Medical Association, Sarasota, May 3-4. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Savannah, May 17-20. Dr. Allen H. Bunce, 139 Forrest Avenue N.E., Atlanta, Secretary.

Illinois State Medical Society, Springfield, May 17-19. Dr. Harold M. Camp, 203 Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Sioux City, May 4-6. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.

Kansas Medical Society, Kansas City, May 3-5. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.

Louisiana State Medical Society, New Orleans, May 9-10. Dr. P. T. Talbot, 1430 Tulane Avenue, New Orleans, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 26-27. Dr. Walter Dent Wise, 1211 Cathedral Street, Baltimore, Secretary.

Medical Women's National Association, New Orleans, May 8-9. Dr. Sylvia Allan, Winthrop College, Rock Hill, S. C., Secretary.

Minnesota State Medical Association, St. Paul, May 23-25. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.

Mississippi State Medical Association, Jackson, April 12-14. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Jefferson City, May 23-26. Dr. E. J. Goodwin, 634 North Grand Boulevard, St. Louis, Secretary.

Nebraska State Medical Association, Lincoln, May 24-26. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Manchester, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New York, Medical Society of the State of, Buffalo, May 23-25. Dr. Daniel S. Dougherty, 2 East 103d Street, New York, Secretary.

North Carolina, Medical Society of the State of, Winston-Salem, April 18-20. Dr. L. B. McBrayer, Southern Pines, Secretary.
Ohio State Medical Association, Dayton, May 3-4. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.
Oklahoma State Medical Association, Tulsa, May 24-26. Dr. Claude A. Thompson, Manhattan Building, Muskogee, Secretary.
South Carolina Medical Association, Columbia, April 19-21. Dr. E. A. Hines, Seneca, Secretary.
Tennessee State Medical Association, Memphis, April 12-14. Dr. H. H. Shoulders, 706 Church Street, Nashville, Secretary.
Texas, State Medical Association of, Waco, May 5-7. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Cancer, New York

16: 1-225 (Jan.) 1932

*Ovarian Neoplasms: Some Points in Their Pathology, Clinical Features and Treatment. W. B. Bell and M. M. Datnow.—p. 1.
*Experimental Production of Tumors of Connective Tissue. H. Burrows, I. Hieger and E. L. Kennaway, London, England.—p. 57.
*Clinical Study of Etiology of Gastric and Esophageal Carcinoma. L. F. Craver, New York.—p. 68.
*Borderline Breast Tumors: Encapsulated and Nonencapsulated Cystic Adenomas, Observed from 1890 to 1931. J. C. Bloodgood, Baltimore.—p. 103.
*Some Essential Factors in Pathology and Treatment of Cancer of Skin. L. H. Jorstad, St. Louis.—p. 177.
Transplantable Benign Adenomas in Rats. G. H. Robinson and R. C. Grauer, Pittsburgh.—p. 184.
Lactation in Transplantable Benign Mammary Adenomas in Rats. R. C. Grauer and G. H. Robinson, Pittsburgh.—p. 191.
Thyroid Carcinoma in White Mouse: Report. G. C. Cameron, Toronto.—p. 202.
*Metastatic Carcinoma of Heart. R. L. Hamilton, Sayre, Pa.—p. 205.
Cancer Cures. I. I. Kaplan, New York.

Ovarian Neoplasms.—Bell and Datnow discuss the importance and the difficulties of an adequate classification of ovarian neoplasms and set forth a new classification. In this, new growths are primarily divided into those which are intrinsic in origin and those which are extrinsic. General etiologic factors are briefly mentioned. At present the knowledge on this subject is singularly incomplete. The relative frequency of the principal histologic types of neoplasm was estimated from an examination of 2,603 cases, which for the most part were collated from the literature but included a personal group. A separate table is given in respect of malignant neoplasms. The macroscopic appearances of ovarian tumors in respect of benignancy and of malignancy are considered, and cases illustrative of the clinical difficulties that may arise are recorded. The histologic appearances of certain kinds of neoplasm are described: 1. In relation to ontogenesis. Here the development of the ovary, and the phenomena found in fetal ovaries are explained. 2. In relation to certain neoplasms of intrinsic origin from functional tissues: (*a*) folliculomas; (*b*) luteinomas; (*c*) interstitial cell tumors; (*d*) peritheliomas and endotheliomas, and (*e*) innocent and malignant neoplasms of connective tissue origin. Neoplasms of intrinsic origin from developmental relics are also discussed in respect of papillary neoplasms, the histologic appearances of innocent, so-called borderline, and malignant papillary tumors being contrasted. 3. Certain intrinsic and extrinsic nonpapillary malignant neoplasms, according to their mode of origin. The results of the chemical examination of twenty ovarian cysts, two parovarian cysts and two hydrosalpinges are given in tabular form.

Experimental Production of Tumors of Connective Tissue.—Burrows and his associates report that subcutaneous injections of 1:2:5:6-dibenzanthracene in lard produced tumors of the connective tissue, chiefly spindle-cell, in thirty-one out of ninety-three mice and in fifteen out of sixty-seven rats. The tumors invade voluntary muscle, show growth as autografts (in rats), and have formed glandular metastases (in rats). Various strains of grafts from these tumors have reached the twelfth and sixteenth generations in mice and the eighth and tenth generations in rats; these strains give now from 80 to 100 per cent of takes. A number of control experiments on the effect of lard and other fats alone are in progress.

Etiology of Gastric and Esophageal Carcinoma.—Craver presents an analysis of the data obtained by a detailed questioning of thirty-six patients with gastric carcinoma and eighteen patients with esophageal carcinoma regarding their previous history and family history. In addition to the family history, the inquiry was directed particularly toward sixteen points in the previous life of each patient. Eight of these points were concerned with data relating to food factors, including alcohol, water, size of meals, rapidity of eating, heat of ingesta, coarseness of foods, amount of seasoning used and irregularity of meals. Dental disease and lack of teeth comprised two more factors. The remaining factors were drug consumption, particularly as concerned cathartics, the history of other gastro-intestinal diseases, history of sinusitis, tonsillitis and evidence of arteriosclerosis. Certain other aspects of the patients' previous existence were touched on in the course of the study. On the basis of his study the author asserts that, by means of grading the various factors that were investigated, a definite discrepancy appears between the factors receiving the higher scores in cases of carcinoma of the stomach and those receiving the higher scores in cases of carcinoma of the esophagus. For cancer of the stomach the following factors stood in the higher ranks: poor teeth, lack of teeth, other gastro-intestinal diseases, heat of ingested food and drink, irregularity of meals, lack of water, seasoning, drugs (cathartics), rapid eating, tobacco and alcohol, in the order named. For cancer of the esophagus the following factors attained the higher scores: tobacco, alcohol, lack of water, poor teeth, lack of teeth, and drugs (cathartics). This very discrepancy might be used to meet a criticism of lack of control cases, for, if one expected to find that any group of individuals of similar ages and social status would have the same factors of bad teeth, eating habits, use of tobacco and alcohol, and so on, no such definite discrepancy should appear between these two groups. While one would perhaps not be justified in drawing conclusions with any degree of finality from the small series of patients, the amount of information that did appear confirms the author in his belief that clinical research of this type is the primary approach to a discovery of the etiology of many of the forms of human cancer. Close analysis of all the conceivably pertinent influences to which an individual has been subjected is likely, in the long run, to be the method most productive of information that can be applied toward the prevention of cancer.

Borderline Breast Tumors.—According to Bloodgood, in the past the larger number of borderline tumors have, unfortunately, been treated ultimately by the complete operation for cancer. Some have been clinically malignant, and the radical operation has been performed without an exploratory incision. In others the gross appearance of the nonencapsulated area, or the diffuse involvement of the breast, did not impress the operator as malignant, but the pathologist later concluded that the lesion was either actually malignant or sufficiently suggestive to justify the complete operation. There has been in these cases almost every combination of operative treatment. When the lymph nodes have been removed, no metastases have been found and the follow up has produced no clinical evidence that the original tumor was malignant. When one studies those cancers of the breast about which pathologists are in complete agreement as to the interpretation of the microscopic section, in which the complete operation has been performed with or without exploratory incision, in which the axillary lymph nodes have shown no involvement, and the patients have been followed five years, one never sees 100 per cent cures. Only in the borderline group are 100 per cent cures to be found. When the actual sections of borderline tumors are mixed with sections of undoubted cancer—comedo or duct cancer, colloid cancer, scirrhous and medullary carcinoma, cancer cysts, cancer in intracystic papilloma—the experienced pathologist will have no difficulty in separating the borderline from the distinctly benign cases. But the same pathologist, meeting the borderline case in the operating room, when the tumor is not encapsulated and the section is not from the wall of a blue-domed cyst or an

intracystic papilloma, hesitates and fears cancer. One of two things happens—either the surgeon is advised to perform the complete operation at once, or the wound is closed and sections of the tumor are restudied in the laboratory or perhaps submitted to one or more colleagues, usually with the final decision that complete operation is the safer procedure. As this borderline group is steadily on the increase, it seems imperative, through the publication of extensively illustrated studies and by the help of frequent microscopic demonstrations in medical centers, to offer an opportunity for surgical pathologists to become familiar with its varying microscopic pictures, in the hope that more breasts can be saved with as little risk as when the complete operation is unnecessarily performed. The problem is a clinical one or one of gross pathology, but the final decision in cases subjected to operation must ultimately be founded on the frozen section expertly cut, properly stained, and accurately interpreted in the operating room.

Pathology and Treatment of Cancer of Skin.—Jorstad is convinced that all skin carcinomas should be treated as if they were malignant. It cannot be determined clinically whether a tumor is a typical basal-cell, a basal-squamous-cell, or a squamous-cell carcinoma. One never knows when a basal-squamous-cell carcinoma will change into a squamous carcinoma. Some clinicians apparently are not cognizant of this fact. If these factors are kept in mind when one deals with skin carcinoma, the author feels certain that the percentage of recurrences and bad results will be greatly diminished.

Metastatic Carcinoma of Heart.—Hamilton reports a case of diffuse metastatic carcinoma of the heart, primary in the left bronchus. In this case the lung showed relatively little involvement compared with the extensive involvement of the myocardium. Notwithstanding the encroachment of the neoplasm on the coronary circulation and on the cavities of the heart, the symptoms suggesting myocardial involvement were surprisingly few and mild. The diagnosis of metastasis to the heart was not made during life, although involvement of the pericardium was suspected.

American Journal of Diseases of Children, Chicago

42: 1281-1496 (Dec.) 1931

Blood Pressure in Boys and Girls Before and After Puberty: Its Relation to Growth and Maturity. H. G. Richey, Chicago.—p. 1281.
*Hemophilia: Treatment by Protein Sensitization. R. C. Eley and S. H. Clifford, Boston.—p. 1331.
*Electrocardiogram in Children with Chronic Rheumatic Heart Disease and Heart Failure. M. M. Weiss, Louisville, Ky.—p. 1339.
*Digitalis Studies on Children with Heart Disease: IV. Effects of Digitalis on Edema of Children with Rheumatic Fever and Chronic Valvular Heart Disease in Presence of Sinus Rhythm. S. P. Schwartz, New York, and J. Levy, New Rochelle, N. Y.—p. 1349.
*Mononuclear Erythrophagocytosis in Blood of New-Born Infant. A. F. Abt, Chicago.—p. 1364.
*Amniotic Sac Contents in Lungs of Infants. S. Farber and L. K. Sweet, Boston.—p. 1372.
Nutrition of Twins on Vegetable Diet, During Pregnancy, Nursing Period and Infancy. Dorothy Engelhard Lane, Berkeley, Calif.—p. 1384.

Hemophilia.—Eley and Clifford treated eight children suffering from hemophilia by protein sensitization for a period ranging from a few months to more than two years. In each case there was a definite reduction in the coagulation time of the capillary blood. However, it should be emphasized that the coagulation time of the venous blood was not altered. The treatment proved of no value in controlling hemorrhage from the larger blood vessels or in preventing the occurrence of hemorrhagic effusion into joints, subcutaneous hematomas or intestinal bleeding. The therapy was of convincing benefit in the prevention or control of bleeding from superficial injuries. The authors believe that, despite its limited benefits, this method of treatment is of sufficient value to be advised in every case of hemophilia.

Electrocardiogram in Children with Chronic Rheumatic Heart Disease.—Weiss made an analysis of the electrocardiograms of eighty-seven afebrile children with chronic rheumatic heart disease and regular rhythm in various stages of heart failure. The average height and duration of the P wave were greater than normal in all leads, owing to the predominance of cases of mitral stenosis and insufficiency. Notching of the P deflection was frequently associated with the cases of mitral stenosis and those showing decreased functional activity. Notching was also associated with tall and long P waves. Inversion of the P wave, inconstant and variable even in the same record, was found only in lead III, without any clinical significance. Slight and inconstant variations in the size and shape of the P deflection in the same lead were frequently noted and found to have no clinical significance. The auriculoventricular conduction time was increased in 30 per cent of the cases. No disturbances in intraventricular conduction was noted. The S-T interval was above the iso-electric line in one or more leads in seven instances. No abnormalities of the T wave were noted except for inversion in leads II and III in two cases. Spontaneous variations in the T wave, which were found to occur when daily records were taken, must be considered when digitalis studies are made in children. Right axis deviation was found in 60 per cent of the patients with mitral stenosis. Sinus arrhythmia in the presence of congestive heart failure has no prognostic significance. Routine electrocardiograms had only a confirmatory diagnostic value. An abnormal electrocardiogram had a definite prognostic importance, since the largest and longest P waves and those records that showed notching of the peak in all leads occurred with the greatest frequency in the groups of children suffering with advanced heart failure.

Digitalis Studies on Children with Heart Disease.—Schwartz and Levy gave sixty-seven children between the ages of 4 and 5 years with congestive heart failure and rheumatic heart disease variable dosages of digitalis of a potency of 1 cat unit per cubic centimeter to the point of nausea and vomiting and for longer periods when these minor toxic signs did not appear. All these children were in the afebrile stage of the disease when these observations were made, and they all had a regular sinus rhythm with a ventricular rate that averaged from a minimum of 66 to a maximum of 110 beats per minute. In approximately one third of the cases, the experiments were repeated on several occasions at a time when the children had shown increasing signs of congestive heart failure, such as swelling of the face and the abdomen, hydrothorax, ascites, and edema of the legs with enlargement of the liver. A loss of body weight within one week following the use of the drug, with striking improvement in the signs and symptoms, was observed in only one child among the sixty-seven. Even in this case it was not certain that the improvement resulted from the use of the drug. No therapeutic response to digitalis was noted in the other cases. The authors believe it is probable that the type and pattern of congestive heart failure following rheumatic fever and chronic rheumatic valvular heart diseases are responsible for the refractoriness of these children to digitalis in effective doses.

Mononuclear Erythrophagocytosis in Blood of New-Born Infant.—Abt reviews the literature on the phagocytosis of erythrocytes by circulating monocytes. He found this phenomenon in a case of anemia of the new-born. Mononuclear erythrophagocytosis in the circulating blood of a new-born infant has not been previously reported. A brief discussion of the various theories concerning the origin of monocytes has been given and the futility of attempting to determine the origin of blood monocytes from any type of smear made from the peripheral blood stream alone is pointed out. The phagocytosis of erythrocytes by cells with typical lymphocytic nuclei is reported and pictured.

Amniotic Sac Contents in Lungs of Infants.—In a study of the lungs of 124 infants who had lived from two hours to five weeks Farber and Sweet found amniotic sac contents in the lungs of 88 per cent, and absent in 12 per cent. Large amounts of sac contents were present in 15 per cent of the series. The relation of the aspiration of amniotic sac contents to intrauterine asphyxia is shown, and the importance of such aspiration as an additional cause of respiratory embarrassment to the new-born is emphasized. The methods of recognition of sac contents are given, and the reaction of the lungs to the aspirated materials is described. Two distinct pathologic pictures with intermediate gradations resulting from the aspiration of sac contents are described, and an interpretation of their significance is offered.

American Journal of Orthopsychiatry, Menasha, Wis.

2: 1-101 (Jan.) 1932

Viewpoints on Stuttering. F. W. Brown, New York.—p. 1.
Psychiatry in Children's Institution. O. B. Markey, Cleveland.—p. 25.
Sidelights on Parent-Child Antagonism. G. Zilboorg, White Plains, N. Y.—p. 35.
Relation of Left-Handedness to Behavior Disorders. I. S. Wile, New York.—p. 44.
A Critical Analysis of Progress of Fifty-Five Feebleminded Children Over a Period of Eight Years: Two Surveys. L. A. Lurie, Leah Schlan and Margaret Freiberg, Cincinnati.—p. 58.
Problems Presented by Children of Parents Forced to Marry. Julia Deming, Boston.—p. 70.

American J. Physical Anthropology, Philadelphia

16: 123-281 (Oct.-Dec.) 1931

Anthropology of the Sioux. A. Hrdlička, Washington, D. C.—p. 123.
Relative Growth of Extremities from Two to Eighteen Years of Age. Ruth Sawtell Wallis, Iowa City.—p. 171.
Physical Form of Mississippi Negroes. M. J. Herskovits, Vivian K. Cameron and Harriet Smith.—p. 193.
Pedomorphism in Prebushman Skull. M. R. Drennan, Cape Town, South Africa.—p. 203.
Cervical Ribs: A Prehistoric Example. H. S. Denninger, Chicago. —p. 211.
Cusps in Mandibular Molar Teeth of the Eskimo. M. S. Goldstein, Washington, D. C.—p. 215.
Proportion Between Interorbital Width and Facial Height: New Cranial Index; Its Significance in Modern and Fossil Man. J. Cameron. —p. 237.

American Journal of Physical Therapy, Chicago

8: 289-316 (Feb.) 1932

Electrotherapy: A Few Applications in Surgical Urology. W. S. Pugh, New York.—p. 295.
Colonic Therapy: Its Relation to Medical Practice. E. S. Barghoorn, Dayton, Ohio.—p. 304.
We: Electric Expeditionary Forces. B. B. Grover, Colorado Springs. —p. 307.

Am. J. Roentgenol. and Rad. Therapy, Springfield, Ill.

27: 1-148 (Jan.) 1932

Relation of Intensity of Radium Radiations to Tissue Reaction Using Segment of Growing Mouse Tail as Biologic Indicator. H. J. Bagg and C. R. Halter, New York.—p. 1.
Divergences Between Anticipated and Observed Results of Irradiation of Pathologic Tissues. F. W. Stewart, New York.—p. 14.
Grouping of Radium Tubes in Packs or Plaques to Produce the Desired Distribution of Radiation. Edith H. Quimby, New York.—p. 18.
*Roentgen Treatment of Agranulocytosis: Report of Two Cases with Recovery. L. T. Gager and Alma Jane Speer, Washington, D. C. —p. 40.
Evolution of Pulmonary Tuberculosis in Children as Revealed by Roentgenograms. H. D. Chadwick, Detroit.—p. 46.
Hepatography and Lienography Following Injection of Thorium Dioxide Sol (Thorotrast). W. H. Stewart, M. Einhorn and H. E. Illick, New York.—p. 53.
Niche in Diagnosis of Jejunal Ulcer. J. Buckstein, New York.—p. 59.
*Signs of Tuberculous Enterocolitis. H. H. Cherry, Waverley Hills, Ky. —p. 65.
Roentgen-Ray Pelvimetry: Simplified Stereoroentgenographic Method. P. C. Hodges and A. C. Ledoux, Chicago.—p. 83.
Demonstration of Vesical Calculi by Roentgenography. H. A. Judson, Los Angeles.—p. 97.
Acute Pulmonary Edema: Case Report. F. O. Coe and L. S. Otell, Washington, D. C.—p. 101.
Intravenous Urography After Maydl's Operation for Exstrophy of Urinary Bladder. R. Simon, Strasbourg, France, and A. Brunschwig, Washington, D. C.—p. 103.
Wave Form Analysis by Means of Roentgen-Ray Strobograph. C. B. Braestrup, New York.—p. 105.

Roentgen Treatment of Agranulocytosis.—Gager and Speer report two cases of agranulocytosis, with recovery. Roentgen irradiation was the only general therapeutic agent employed in the crises of the disease. While the clinical facts and the already rich literature make comment at any length unnecessary, there is offered, to the authors' minds, unequivocal demonstration of the specific value of roentgen radiation in stimulating the production of granulocytes and of the body as a whole. This surprising result of a minimal roentgen dosage in such a serious disease picture offers for analysis a roentgen-ray effect of great biologic interest and, not less important, the nature of the pathologic process which thus reverts to normal.

Signs of Tuberculous Enterocolitis.—Cherry believes that although the accurate diagnosis of intestinal tuberculosis varies with increasing irregularity as segments more remote from the ileocecal region in either direction are studied, the procedure merits concerted effort. If there are intestinal lesions, one or more are sure to occur in the ileocecal region. Also symptoms occur much more frequently than commonly believed, so that when roentgen and subjective signs are carefully considered a large percentage of positive cases are detected. Constipation is rarely a sign of intestinal tuberculosis. Pain and loose stools are the most constant symptoms. The opaque meal is of more value than the opaque enema and is the only method of accurately interpreting the progress of a case. There are no definite criteria by which one may conclude that ulceration has completely healed. There are signs of improvement which are moderate proof, when present from two to three years, the patient having no tubercle bacilli in his sputum for the same period, that healing has probably occurred. The twenty-four hour motility is of great significance when trying to diagnose ulceration. No more than the ascending colon may be empty, but this should be entirely destitute of barium. Any segment of the colon having ulceration is usually entirely free of barium at the twenty-four hour examination.

Archives of Internal Medicine, Chicago

49: 1-172 (Jan.) 1932

*Usual and Unusual Reactions to Protein (Fever) Therapy. P. S. Hench, Rochester, Minn.—p. 1.
*Quantitative Determination of Potency of Liver Extract. J. P. McGowan, Aberdeen, Scotland.—p. 26.
*Albuminuria in College Men. H. S. Diehl and C. A. McKinlay, Minneapolis.—p. 45.
*Acidosis of Nephritis: Its Clinical Significance. A. P. Briggs, St. Louis. —p. 56.
Tuberculosis Among Nurses. E. K. Geer, St. Paul.—p. 77.
*Absorption of Gas from Any Closed Space Within Body, Particularly in Production of Atelectasis and After Pneumothorax. Y. Henderson and M. C. Henderson, New Haven, Conn.—p. 88.
*Experimental Agranulocytosis: Infection of Rabbits with Salmonella Suipestifer by Way of Blood Stream. B. M. Fried and W. Dameshek, Boston.—p. 94.
Some Immunologic Aspects of Leukemia. W. C. Hueper and Mary Russell, Philadelphia.—p. 113.
*Agranulocytosis and Hypogranulocytosis. H. M. Conner, H. M. Margolis, I. W. Birkeland and J. E. Sharp, Rochester, Minn.—p. 123.
*Congestive Heart Failure: XII. Relation Between Thickness of Cardiac Muscle Fiber and Optimum Rate of Heart. T. R. Harrison, R. Ashman and R. M. Larson, Nashville, Tenn.—p. 151.
Severe Renal Insufficiency: Untoward Effects of Intravenous Administration of Solution of Sodium Chloride. E. G. Wakefield and N. M. Keith, Rochester, Minn.—p. 165.

Protein Therapy.—Hench studied the reactions to injections of foreign protein (typhoid vaccine intravenously) in a group of about 2,500 patients, representing an aggregate of about 10,000 injections. Of these 2,500 patients, approximately 1,500 were in the arthritic service and 1,000 in the vascular and other services. The reactions were, in general, well borne, and the beneficial results from protein therapy justify, in certain diseases at least, its continued use and further development. Unusual reactions to such treatment were rare. They occurred in this series in fourteen cases in all, an incidence of about 0.5 per cent of the patients. They occurred seventeen times in the treatment of twelve patients with arthritis (including one patient with rheumatic fever) and three times in the treatment of two patients with occlusive vascular disease. Thus, of 10,000 injections only 20 were followed by an unusual reaction, an incidence of 0.2 per cent of the injections. Unusual reactions subsequent to the injections were as follows: acute and subacute appendicitis, cholecystitis, enteritis, pleurisy, pericarditis, iritis, glaucoma, adenitis, extensive vascular thrombosis and renal insufficiency. In arteriosclerotic vascular disease, acute thrombosis is the occasional possibility. In arthritis and other diseases, the reactions are variable. It is believed that these reactions are not incidental complications but are related to protein therapy in the presence of an underlying disease. Death occurred in three instances, a mortality rate of 0.12 per cent. This constitutes a very small risk but a risk that must be recognized and that can possibly be avoided by the most careful selection of patients. Unsuspected latent or quiescent focal inflammation and infection may be stimulated. Except in certain conditions, of which pulmonary tuberculosis is one, the known presence of latent or quiescent foci should not act as a contraindication to such treatment. Indeed, part of the value of such treatment lies in the possible demonstration of suspected or unsuspected foci otherwise undemonstrable at the time. Such reactions, if their significance is appreciated, may be advantageous rather than detrimental.

Quantitative Determination of Potency of Liver Extract.—McGowan describes a method for the quantitative

determination of the potency of liver extracts by means of fowls suffering from pernicious anemia. In substance, it consists of the injection intraperitoneally, twice daily over a period of time, of increasing small doses of the extract until a dose is reached at which a "response" is obtained. The response consists in a sharply appearing and definite increase in the hemoglobin percentage and number of red blood cells. This response for the same sample of extract appears to be obtained at the same dosage, whatever the state of the marrow is, provided it is in a condition of hyperplasia and has not become aplastic. The response dose for fowls under the conditions specified by the author is in the neighborhood of one-twentieth phial, or 0.225 Gm., daily of the extracts employed.

Albuminuria in College Men.—Diehl and McKinlay report the results of study of albuminuria in healthy young men based on an analysis of the records of the physical examinations of 20,000 young men who entered the University of Minnesota as students between 1921 and 1930. In testing for albumin in the urine, the nitric acid test was used throughout, the reagent and the urine being layered in the test tube by means of a pipet. Of the 20,000 men, 5.32 per cent showed albumin in the urine on the examination of a single specimen. On reexamination in 606 cases of albuminuria, 66.2 per cent showed albumin on only one examination; 13.1 per cent showed occasional albuminuria; 11.8 per cent showed persistent albuminuria, and 6.5 per cent gave evidence of what was probably kidney disease. The calculated percentage of the total group that showed persistent albuminuria and probably kidney disease is so small that even though there may be some overlapping in the groups it is evident that kidney disease is a rare condition in young adults. No significant relationships were found between albuminuria and systolic or diastolic blood pressure, a history of diphtheria or of tonsillitis or tonsils that on examination appeared abnormal. The authors believe that definitely positive and apparently significant relationships exist between albuminuria and weight, pulse rate, a history of rheumatism, "frequent colds" and a family history of kidney disease.

Acidosis of Nephritis. — Briggs studied the acid-base equilibrium in a group of nephritic patients in whom vomiting and other complications were negligible. It was observed that the condition of the serum acids is similar to that found after ligation of both ureters in experimental animals. There is, however, a slight depression in the level of serum fixed base. It was observed that prolonged administration of mineral acid to these nephritic patients (without edema) leads to waste of more base than in normal controls. The author concludes that the defect in conservation of base, as well as of water, chloride and other substances, depends largely on an increased rate of flow of the glomerular fluid through the surviving tubules. He also concludes that the chief function served by ammonia formation is the prevention of excess acidity in the genito-urinary tract.

Absorption of Gas from Any Closed Space Within Body.—According to the Hendersons, the development of atelectasis is explainable on the basis of well established principles of physiology. The forces involved are essentially the same as those that control the diffusion of gases in normal respiration. The same principles and forces account also for the absorption of air from a pleural space after a therapeutic pneumothorax, and indeed for the absorption of gas from any space in the body. The pressure of oxygen in venous blood is about 60 mg. lower than in arterial blood. The pressure of carbon dioxide is only about 6 mm. higher in venous blood than in arterial blood. On this account, the total gas pressure in venous blood is always considerably less ($60 - 6 = 54$ mm.) than the total gas pressure of the atmosphere on the exterior of the body. The pressure of air in the lungs and of the atmosphere on the outside of the body compresses any gas-filled cavity, such as an occluded lung or pleural space, until the total gas pressure within it is nearly the same as that of the atmosphere. This pressure is therefore higher than the total gas pressure in the venous blood. Each gas then diffuses into the blood at a rate dependent on its own partial pressure, its solubility and the capacity of the blood for it. As rapidly as gas is absorbed, the cavity is compressed by the pressure of the atmosphere on the soft tissues. As oxygen and carbon dioxide are absorbed quite readily, the partial pressure of nitrogen in the occluded air is thus raised above the pressure of this gas in the blood, and it gradually diffuses and is carried away by the blood. The rapidity of absorption is determined by the vascularity and surface area of the part. In the absorption of gases, blood pressure is not at all involved. The only forces acting are the pressures of the gases in the occluded space and in the blood, and the atmospheric pressure in the normal parts of the lungs and on the exterior of the body.

Experimental Agranulocytosis. — Fried and Dameshek present the results of a study to determine the possible similarity between the blood picture as seen in agranulocytosis in man and that found in a form of experimental sepsis in rabbits. The results revealed that there are close similarities between the agranulocytosis resulting from the hematogenous infection of rabbits with Salmonella suipestifer and that observed in cases of agranulocytic angina in man. Thus, the reaction in severe cases of human agranulocytosis corresponds to that of the animals which received overwhelming doses of bacteria; i. e., a persistent neutropenia and an intense necrosis of the bone marrow without signs of regeneration. A close similarity likewise exists between the "recovery phase" seen in the circulating blood in clinical agranulocytosis and that disclosed in the circulation of rabbits infected with relatively small doses of bacteria; i. e., a marked histiomonocytosis.

Agranulocytosis and Hypogranulocytosis.—Conner and his associates report fourteen cases in which the striking feature was the leukopenia and partial disappearance of the granular leukocytes (hypogranulocytosis) or complete disappearance of them (agranulocytosis). In seven cases agranulocytic angina was definitely present, and in three it was doubtfully present. In the sense in which they are used by the authors, the terms agranulocytosis and hypogranulocytosis do not indicate entities but probably stand for types of reaction of the leukopoietic apparatus to various types of infection or intoxication. Agranulocytosis is of serious prognostic significance. Death occurred in five of the seven cases of agranulocytic angina, in one of the three doubtful cases of agranulocytic angina, and in all of the four cases of agranulocytosis or hypogranulocytosis due to other types of disease.

Congestive Heart Failure.—Harrison and his associates made a study of ventricular fiber thickness, heart rate and the length of diastole in a number of animals of different species, in normal human subjects of various ages and in human adults with enlarged hearts. They noted that in all normal subjects a thick ventricular fiber is associated with a slow heart rate and a thin heart fiber with a fast heart rate. They believe that the slow heart rate in animals with thick cardiac fibers is advantageous because the recovery period of the heart is prolonged; i. e., it takes oxygen longer to diffuse through a thick fiber than through a thin fiber. Subjects with enlarged hearts have heart rates much faster than would seem to be optimal for such thick fibers. These observations suggest that "cardiac fatigue" may be due, in part, to a heart rate that is faster than optimal. It is believed that this concept may explain why congestive failure may occur in the absence of any myocardial abnormality other than hypertrophy and dilatation. The data suggest further that if it were possible to reduce the cardiac rate to a level considerably below the normal, "cardiac fatigue" would be much benefited.

Archives of Otolaryngology, Chicago

15: 1-164 (Jan.) 1932

*Operative Treatment of Facial Palsy: Introduction of Nerve Grafts into Fallopian Canal and Other Intratemporal Methods. C. Ballance, London, England, and A. B. Duel, New York.—p. 1.
*Infections of Throat Due to Hemolytic Streptococci and Their Relation to Arthritis and Arthralgia: Observations with Particular Reference to Streptococcus Epidemicus of Septic Sore Throat. I. Pilot, Chicago.—p. 71.
Natural Orifice of Maxillary Sinus: I. Anatomic Studies. M. C. Myerson, New York.—p. 80.
*Physiology of Drainage of Nasal Mucus: I. Flow of Mucous Currents Through the Drainage System of Nasal Mucosa and Its Relation to Ciliary Activity. A. Hilding, Rochester, Minn.—p. 92.

Operative Treatment of Facial Palsy.—Ballance and Duel describe experiments in which they anastomosed the trunk of the facial nerve to the glossopharyngeal nerve (six experiments on baboons), the hypoglossal nerve, the descendens noni nerve, the lingual nerve, the superior laryngeal nerve and the

auriculotemporal nerve. At a later date in rhesus monkeys and cats, the facial nerve was grafted to the great auricular nerve, the great occipital nerve, the transverse cervical nerve, the auriculotemporal nerve and other sensory and motor nerves. Lastly, certain intratemporal operations were performed on baboons, rhesus monkeys and cats. In all the anastomosis experiments, the facial nerve was removed from nearly the whole length of the fallopian canal. The anastomosis experiments show (1) the comparatively satisfactory result of glossopharyngeal-facial anastomosis and (2) the remarkable result of auriculotemporal-facial anastomosis, considering that the auriculotemporal is a comparatively small sensory nerve. The intratemporal experiments show: 1. The result of division of the facial nerve in the fallopian canal, and the value of decompression; decompression of the facial nerve in the fallopian canal is not a new method, but its paramount importance in the healing process of the facial nerve has not been generally recognized. 2. The success attending the introduction of a nerve graft into the fallopian canal. The experiments exhibit a new method of operation for the cure of facial palsy which the authors believe holds out greater promise of more nearly perfect recovery than any plan yet devised.

Streptococcus Epidemicus of Septic Sore Throat.—According to Pilot, arthritis and arthralgia may complicate scarlet fever, erysipelas, wound infections and sore throat due to hemolytic streptococci. That the complicating arthritis develops three or more weeks after the onset of the streptococcal disease suggests hypersensitiveness as an important factor. Streptococcus epidemicus of septic sore throat may be responsible for a relatively small number of cases of acute and chronic arthritis of the so-called rheumatic type. The persistence of Streptococcus epidemicus in the tonsils is often associated with arthritis. Removal of the tonsils terminates the carrier state, and the associated arthritis frequently disappears.

Physiology of Drainage of Nasal Mucus.—Hilding reports the results obtained in a study of the flow of nasal secretion of thirty-one persons. The technic consisted simply in dotting small drops of india ink on various portions of the nasal mucosa and observing and recording the direction and rate of flow. It was found that the nasal mucosa in the anterior portion of the nose, where it meets the inrushing inspired air, does not exhibit ciliary activity, as indicated by the movement of the overlying mucus. This inactive area lies in the anterior third of the nose and drains largely through the inferior and middle meatuses. It is irregular in size and shape. It ordinarily includes the preturbinal region, the anterior ends of the inferior and middle turbinates, approximately the anterior fourth to third of the septum, and a narrow strip across the floor. The mucosa posterior to these areas exhibits active ciliary motion, which is greatest in the regions best protected from the flow of inspired air. The protective layer of mucus that overlies all these nasal surfaces is continuous with that in the pharynx and esophagus. It moves, throughout its extent, much in the manner of an intact membrane. It is motivated by ciliary action and traction. The nose may be said to have a new lining about once every ten minutes in the posterior two thirds of its extent, and about once an hour in the anterior third. The drainage of secretion from the anterior inactive areas, where dust and bacteria lodge, is accomplished by traction and gravity. The course from the lateral wall is largely through the meatuses. The motion is slow, requiring an hour or more for drainage. The drainage of the active areas is rapid, requiring only from three to ten minutes. The course in general is toward the nasopharynx.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

13: 69-124 (Feb.) 1932

Treatment of Bronchial Carcinoma by Electrocoagulation, Radium Implants and High Voltage Roentgen Ray. A. F. Tyler, Omaha.—p. 69.
Environment, Habits and Health. A. Bachem, Chicago.—p. 75.
"Cold Quartz" Ultraviolet Orificial Irradiation. A. B. Nugent, Chicago.—p. 82.
Psychoneuroses from Standpoint of Diagnosis and Management as Concerns Internist. W. C. Stoner, Cleveland.—p. 86.
Value of Zinc Ionization in Selected Cases of Suppurative Otitis Media. I. D. Walker, Tonkawa, Okla.—p. 90.
Atelectasis: A Postoperative Indication for Diathermy. J. F. Kelly, Omaha.—p. 96.
Routine Postoperative Use of Physical Therapy in General Surgery. H. C. Miller, Omaha.—p. 99.

Archives of Surgery, Chicago

24: 1-170 (Jan.) 1932

*Roentgenologic Displacements in Colles' Fracture, with Especial Reference to Mechanism of Accompanying Fracture of Ulnar Styloid: One Hundred Cases. L. Carp, New York.—p. 1.
*Pathogenesis of "Strawberry" Gallbladder: (Cholesterosis of Gallbladder). R. Elman and E. A. Graham, St. Louis.—p. 14.
*Fracture of Skull in Children. J. Ireland, Chicago.—p. 23.
*Torsion of Omentum: Its Clinical Importance. J. H. Morris, New York.—p. 40.
*Congenital Cystic Dilatation of Common Bile Duct: Review of Literature: Case. M. M. Zinninger and J. R. Cash, Peiping, China.—p. 77.
*Concretio Cordis: I. Clinical Study, with Observations on Venous Pressure and Cardiac Output. C. S. Burwell and W. D. Strayhorn, Nashville, Tenn.—p. 106.
Plastic Operation for Anal Incontinence. H. B. Stone, Baltimore.—p. 120.
*Peptic Ulcer in Experimental Obstructive Jaundice. J. L. Bollman and F. C. Mann, Rochester, Minn.—p. 126.
*Traumatic Necrosis of Liver with Extensive Retention of Creatinine and High Grade Nephrosis. F. C. Helwig and T. G. Orr, Kansas City, Mo.—p. 136.
*Cancer and Weight. C. C. Lund, Boston.—p. 145.
Experimental Esophageal Obstruction. C. A. Dragstedt and R. B. Mallenix, Chicago.—p. 152.
Forty-Sixth Report of Progress in Orthopedic Surgery. P. D. Wilson, L. T. Brown, M. N. Smith-Petersen, J. C. Kuhns and E. F. Cave, Boston; R. K. Ghormley, Rochester, Minn.; M. S. Danforth, Providence, R. I.; G. Perkins, London, England; A. van Dessel, Louvain, Belgium, and C. H. Bucholz, Halle, Germany.—p. 158.

Colles' Fracture.—According to Carp, most Colles' fractures accompanied by fractures of the ulnar styloid have sufficient (96 per cent) displacements of the lower radial fragment to warrant reduction in order to obtain the best possible anatomic realinement which is usually essential for the best end-results. A correlation of roentgenologic and anatomic observations suggests that the ulnar styloid in Colles' fracture, in the great majority of cases, is fractured at the base by the pull of the intra-articular fibrocartilage of the wrist joint and at the middle and tip by the pull of the ulnar collateral ligament. It is logical to assume that both ligamentous structures may act together to produce fracture of the ulnar styloid, especially when the fracture occurs in two or three places simultaneously. Direct violence is probably a negligible factor in any of the fractures of the ulnar styloid, although forceful sudden impact of the carpus against the styloid may be the cause in a small percentage of the cases.

"Strawberry" Gallbladder.—Elman and Graham state that one cannot conclude definitely that stasis is a factor of primary importance in the production of the "strawberry" gallbladder because of clinical evidence that it is difficult to reconcile with such considerations. This evidence is of two kinds. In the first place, it has been shown that the type of person who is least prone to cholecystic disease in general (and this includes both calculi and the "strawberry" gallbladder), namely, the asthenic or the splanchnoptotic type, shows on cholecystographic examination to have the slowest emptying time of the gallbladder and therefore the most stasis. The type, on the contrary, that is most prone to have cholecystic disease, namely, the asthenic or hypersthenic person, who is robust, with large muscles, and inclined to obesity, normally shows the fastest emptying time of the gallbladder and therefore has the least stasis. In the second place, it is well known, following the observations of Courvoisier, that in the majority of instances of even prolonged obstruction of the common duct by malignant disease, in which there is complete stasis of the bile in the gallbladder, there is a noteworthy absence of gallstones or of cholecystic disease. The conclusion seems inevitable that infection is the major factor in the pathogenesis of the "strawberry" gallbladder.

Fracture of Skull.—Ireland discusses eighty cases of proved fracture of the skull in children, with two deaths (2.5 per cent). In all the cases except seven the treatment was conservative, without decompression. Seven patients with depressed fractures and three patients with elevated fractures were treated without operation. All recovered. The author believes that lumbar puncture should not be done for diagnosis when diagnosis can readily be made otherwise. Children suffering from fracture of the skull should in most cases be treated conservatively.

Torsion of Omentum.—Morris summarizes the salient features of torsion of the omentum in the following conclusions: 1. The normal environment and anatomic arrangement of the great

omentum are such as to favor rotation of this structure about its long axis, while the introduction of certain mechanical conditions and pathologic changes within and adjacent to it supply the immediate exciting causes of such rotation. 2. It is clearly established that omental twists are capable of producing clinical symptoms of an acute and chronic character, and that this condition therefore merits some consideration in the diagnosis of abdominal conditions. 3. Variation in the intensity of degree of rotation determines two basic clinical and anatomic types of torsion: (1) the complete, in which acute, progressive symptoms and marked pathologic changes are dependent on complete permanent circulatory obstruction at the site of twist, and (2) the incomplete, which is characterized by vague, chronic recurring symptoms and mild pathologic changes in consequence of incomplete, partial or temporary obstruction which permits repeated spontaneous restitution before pronounced organic changes develop. 4. Diagnosis presents obvious difficulties as indicated by the fact that a correct preoperative diagnosis was recorded in only 7.9 per cent of 217 cases. A statistical study of the series, however, emphasizes certain essential clinical manifestations and points of history the recognition of which should enhance the precision of a preoperative diagnosis. 5. The deliberate fixation of the free margin of the omentum by suture to an adjacent structure may be the source of future complications, and its accidental inclusion during abdominal closure is to be avoided carefully.

Cystic Dilatation of Common Bile Duct.—Zinninger and Cash describe the clinical features and the pathologic changes in a case of congenital cystic dilatation of the common bile duct and review eighty-two other cases reported in the literature. The salient diagnostic features of the condition are that it occurs much more frequently in females than in males and principally in children and young adults. The three most prominent symptoms and signs are pain, jaundice and the presence of a tumor in the right upper quadrant of the abdomen. These changes are often intermittent over a considerable period of time. The etiology is not known, but it is generally agreed that the condition is congenital. From the point of view of treatment, it seems advisable on theoretical grounds to establish as early as possible an adequate communication between the biliary tract and the intestine, for usually there is a hindrance to outflow, whether from a kink, valve, fold, partial occlusion or complete atresia. A second desideratum seems to be avoidance of infection of the biliary system, which frequently occurs after its anastomosis with the intestine. As a measure against infection, excision or partial excision of the cyst to reduce stasis to a minimum would appear to be the most ideal procedure. Unfortunately, on account of technical details previously mentioned, this step is usually impossible. It must also be remembered that an adequate stoma is essential, for in one case the first stoma made subsequently had to be enlarged, and in another case there were recurrent attacks of pain, probably due to the small stoma. On physiologic and theoretical grounds, primary anastomosis seems to be the most desirable procedure, and, in fact, it has given the best results. The condition of the patient in the late stages of complete obstructive jaundice may preclude such a procedure, so that drainage alone may be feasible. In point of fact, in cases in which the patients survived drainage long enough to permit anastomosis, the results were comparable to those in which primary anastomosis was done; on the other hand, the patients in more than half of the cases in which drainage was done died before the second stage could be carried out, and often soon after operation—from one to several days. Frequently the cause of death was hemorrhage from the fistulas. The most encouraging observation brought out by the cases recorded in the literature is that, on the whole, the treatment adopted in the more recent cases has been better than that used in the earlier ones. The diagnosis should not be difficult if one bears in mind that congenital cystic dilatation of the common bile duct may exist, for the clinical symptoms and the physical observations are fairly characteristic. It is to be hoped, therefore, that in the future a correct preoperative diagnosis may be made more frequently, and that there will be still further improvement in the treatment and results.

Concretio Cordis.—In a patient with concretio cordis, studies made by Burwell and Strayhorn on the output of the heart and on the venous and arterial pressures seemed to indicate that the essential defect in the circulatory mechanism was the failure of the heart to relax (dilate) to the normal extent. Similar studies of a patient successfully treated by operation for a similar condition revealed no departure from normal.

Peptic Ulcer in Jaundice.—Bollman and Mann report experiments in which they demonstrated that following ligation of the common bile duct there is marked decrease in resistance to the formation of peptic ulcer in dogs. In sixty-four animals, acute, subacute or chronic duodenal or gastric ulcers developed in from 5 to 295 days after operation. Only twenty-three animals with uncomplicated complete obstructive jaundice, living from 22 to 195 days, died of causes referable to ligation of the common bile duct without showing gross evidence of peptic ulcer.

Necrosis of Liver.—Helwig and Orr report a case of traumatic pulpification of the liver without rupture in which the patient died after eleven days, with an extensive nephrosis. He was extremely jaundiced and had diffuse hemorrhages into the serous cavities. The output of urine was scanty, and the blood nitrogen was greatly increased, particularly the creatinine, which amounted to 25 mg. per hundred cubic centimeters. The mechanism of renal necrosis is discussed, and the histologic renal picture, as well as the clinical course, would seem to favor the theory that some toxin was elaborated in the liver through hemorrhagic necrosis which acted directly on the kidney.

Cancer and Weight.—Lund made a study of 475 proved cases of epidermoid carcinoma of the cervix in which treatment with radium was used. He found that the percentage of cures of patients with approximately normal weight was twice that of patients who were much over or much under normal weight. Seventy-nine patients with adenocarcinoma of the cervix or fundus of the uterus were similarly studied, and a definite but less marked relationship of weight to prognosis was found.

Arkansas Medical Society Journal, Little Rock

28: 143-168 (Jan.) 1932

Schilling's Differential Count. M. J. Kilbury, Little Rock.—p. 143.
Treatment of Congestive Heart Failure. A. G. Sullivan, Hot Springs.—p. 148.
Plea for Use of Spinal Anesthesia in Selected Cases. W. D. Smith, Texarkana.—p. 154.

California and Western Medicine, San Francisco

36: 1-72 (Jan.) 1932

Urinary Infections: Their Classification. F. Hinman, San Francisco.—p. 1.
Lengthening of Lower Extremities. L. C. Abbott, San Francisco.—p. 6.
Temporal Lobe Lesions: Disturbances of Visual Pathways: Report of Cases. H. A. Cave, San Diego.—p. 13.
Some Problems in Medical Economics. C. R. Howson, Los Angeles.—p. 18.
Environmental Allergens, with Especial Reference to Their Importance and Specificity. R. W. Lamson and Virginia Inman, Los Angeles.—p. 24.
Laryngeal Obstruction in Children: Report of Case. R. S. Tillotson, Woodland.—p. 28.
Bacteriophage as Therapeutic Agent in Genito-Urinary Infections. E. W. Schultz, San Francisco.—p. 33.
Tetanus. J. E. Wright, Reno, Nev.—p. 37.
Resuscitation of the New-Born: Comments on Methods. Ethel Righetti, San Francisco.—p. 38.
Erythema Infectiosum. H. C. Coe, Oakland, and F. L. Kelly, Berkeley.—p. 39.
Essays on the History of Embryology: II. A. W. Meyer, San Francisco.—p. 40.
Utah Medical History: Some Reminiscences. Belle A. Gemmel, San Diego.—p. 44.

Canadian Public Health Journal, Toronto

23: 1-50 (Jan.) 1932

*Menace of Raw Milk: I. Milk-Borne Tuberculosis. R. I. Harris, Toronto.—p. 1.
*Id.: II. Typhoid Fever. A. E. Berry, Toronto.—p. 5.
Id.: III. Septic Sore Throat. A. L. McKay, Toronto.—p. 9.
*Id.: IV. Undulant Fever. A. L. McNabb, Toronto.—p. 12.
Place of Engineer in Milk Control Programs. R. H. Murray, Regina.—p. 21.
Practical Points in Production of Clean and Wholesome Milk. A. R. B. Richmond, Toronto.—p. 26.
Tests for Quality in Milk. H. R. Thornton, Edmonton.—p. 32.
Inspection of Milk Pasteurizing Plants. A. E. Berry, Toronto.—p. 37.

Milk-Borne Tuberculosis.—Harris calls attention to the fact that the importance of bovine tuberculosis in man lies not

only in the amount of it which exists but in the ease with which it can be completely eradicated. Pasteurization of the infected milk, if efficiently and consistently carried out, completely eliminates its ability to produce clinical tuberculosis. In communities where pasteurization of milk is carried out, bovine tuberculosis does not exist.

Milk-Borne Typhoid.—Berry presents statistics from diffent countries which indicate that the greatest chance for infection in a milk supply is still typhoid. That the number of cases of this disease is less than that of some others may possibly be attributed to changing conditions and to the manner in which the infection enters the supply. The increasing use of pasteurization in the larger centers of population has resulted in the transfer of milk-borne typhoid from urban to rural parts. Under these conditions the possibility of large outbreaks is fairly well limited. In 1930, in the United States, 54 per cent of the milk epidemics occurred in communities with a population of less than 2,500, and 67 per cent of the outbreaks were reported in centers with a population below 5,000. This condition is further emphasized by the low typhoid mortality in the urban centers. Typhoid in Ontario is now a disease associated with rural communities. The larger the rural population in any country, the greater is the likelihood of higher typhoid mortality. The excellent results in typhoid reduction in the cities, attributed chiefly to water treatment and milk pasteurization, afford an unchallenged direction for the control of this disease. While general pasteurization of all milk may be difficult, no effort should be spared to promote this safeguard. The expenditure for equipment is not unreasonable for even the small dairy. The pasteurization of milk in urban centers is steadily increasing. Precautions must be observed, however, to avoid the creation of a false sense of safety. Pasteurizing equipment and the methods employed may be faulty. The public must be safeguarded in assuming that all milk labeled "pasteurized" is safe. This will be possible only when adequate supervision is maintained by responsible and qualified authorities.

Milk-Borne Undulant Fever.—McNabb states that effective pasteurization is one of the best methods of protecting man from milk-borne infection of undulant fever. Widespread application of pasteurization would eliminate much of this disease. When commercial pasteurization is not practical, home pasteurization should be carried out. Laboratory assistance is essential for the diagnosis of this disease, both in man and in animals. Contagious abortion of cattle presents a difficult problem in which the medical and veterinary professions should unite in research studies and control.

Delaware State Medical Journal, Wilmington

4: 1-20 (Jan.) 1932

Ulcer of Stomach and Duodenum. E. S. Judd, Rochester, Minn.—p. 1.
Kinetocytes: New (Fourth) Blood Element: Preliminary Report. H. I. Goldstein, Camden, N. J.; L. Goldstein, Philadelphia, and H. Z. Goldstein, Newark, N. J.—p. 5.

Florida Medical Association Journal, Jacksonville

18: 309-350 (Jan.) 1932

Importance of Roentgen-Ray Examination of Nasal Accessory Sinuses in Cases with Chronic Cough. J. C. Dickinson, Tampa.—p. 317.
Colonic Diverticula in Relation to Carcinoma and Its Prevention. Rosalie Slaughter Morton, Winter Park.—p. 319.
Some Observations on Hydrochloric Acid as Factor in Gastric Surgery. M. Smith, Miami.—p. 328.
Examination of Urine. J. A. Pines, Orlando.—p. 330.
Eye Manifestations of Systemic Diseases. H. J. Blackmon, Tampa. —p. 333.
Retrodisplaced Uterus. J. A. Powell, West Palm Beach.—p. 335.

Georgia Medical Association Journal, Atlanta

21: 1-42 (Jan.) 1932

Cesarean Section Under Local and Spinal Anesthesia. T. C. Davison and E. Boling, Atlanta.—p. 1.
Tularemia Studies in Georgia. J. C. Massee, Atlanta.—p. 7.
Clinical Study of Diseases of Mammary Gland. J. L. Campbell, Atlanta.—p. 12.
Mycology: Its Relation to Clinical Medicine in the South. J. W. Jones and H. S. Alden, Atlanta.—p. 17.
Impressions of White House Conference on Child Health and Protection. M. A. Ehrlich, Bainbridge.—p. 20.
Trichomas Vaginalis Vaginitis. W. R. Holmes, Atlanta.—p. 23.
Staphylococcus Septicemia. L. F. Lanier, Sylvania.—p. 26.
Perforation of Typhoid Ulcer: Case Report. A. I. Levis, Macon.—p. 27.

Journal of Bacteriology, Baltimore

23: 1-114 (Jan.) 1932

Biologic Approach to Bacteriology. J. H. Brown, Baltimore.—p. 1.

Journal of Bone and Joint Surgery, Boston

14: 1-228 (Jan.) 1932

*Mechanics of Muscular Contractures in Wrists and Fingers. A. Steindler, Iowa City.—p. 1.
Historical Derivation of Physiologic Principles Underlying Treatment of Fractures. R. P. Schwartz, Rochester, N. Y.—p. 17.
Contractures of Hand from Infections and Injuries. S. Bunnell, San Francisco.—p. 27.
*Sympathetic Ganglionectomy and Trunk Resection in Arthritis: Indications and Results. M. S. Henderson and A. W. Adson, Rochester, Minn.—p. 47.
*Treatment of Vascular Diseases of Extremities by Sympathectomy. D. E. Robertson, Toronto, Canada.—p. 57.
Advantages of Operative Treatment of Fractures of Elbow. J. C. Villagrana, Mexico City, Mexico.—p. 65.
*Traumatic Dislocation of Shoulder. R. S. Reich, Cleveland.—p. 73.
*Liver Meal in Treatment of Amyloidosis in Surgical Tuberculosis. B. H. Whitbeck, New York.—p. 85.
Late Ruptures of Extensor and Flexor Pollicis Longus Tendons Following Colles' Fracture. P. E. McMaster, Chicago.—p. 93.
Experimental Study of Distribution of Peripheral Blood Flow. B. Brooks and G. S. Johnson, Nashville, Tenn.—p. 102.
*Effect of Insulin on Healing of Experimental Fractures in Rabbit. W. G. Stuck, Rochester, Minn.—p. 109.
*Diagnostic Sign in Examination of Affections of Sacro-Iliac Joint: Chair-Test. R. M. Yergason, Hartford, Conn.—p. 116.
*Use of Auscultatory Percussion for Examination of Fractures. R. K. Lippmann, New York.—p. 118.
Surgical Approach in Old Posterior Dislocation of Elbow. G. W. Vangorder, Boston.—p. 127.
*Early Sign of Tuberculous Spondylitis in Pregibbus Stage. S. Kofman, Odessa, Russia; Translated by E. Kaplan, New York.—p. 143.
Fusion of Elbow Joint for Tuberculosis: New Technic and Report of Three Cases. H. Hallock, New York.—p. 145.
Surgical Treatment of Low Back Disabilities. E. W. Ryerson, Chicago. —p. 154.
Backache from Industrial Standpoint. P. B. Magnuson, Chicago. —p. 165.
Congenital Elevation of Scapula: (Sprengel's Deformity). R. Patterson, Knoxville, Tenn.—p. 170.
Spindle-Cell Sarcoma of Tendon Sheath: Report of Case. M. B. Cooperman, Philadelphia.—p. 173.
Epiphysitis of Proximal Epiphysis of First Metatarsal and First Phalanx of Big Toe; Coincidental Presence of Proximal or Pseudometatarsal Epiphyses: Case. M. S. Burman and M. Pomeranz, New York.—p. 177.
Generalized Osteitis Fibrosa Cystica Associated with Parathyroid Adenoma. T. P. Noble, Bangkok, Siam.—p. 181.
Hernia of Knee Joint (Baker's Cyst). E. K. Cravener, Schenectady, N. Y.—p. 186.
Unusual Congenital Deformities: Two Cases. A. L. Craig, Honolulu, Hawaii.—p. 188.
Device for Simultaneous Traction and Complete Immobilization of Cervical Spine. J. D. Bisgard, Chicago.—p. 190.
Support for Traction and Countertraction. L. V. Rush and H. L. Rush, Meridian, Miss.—p. 191.
New Apparatus for Lengthening of Legs. F. D. Dickson and R. L. Diveley, Kansas City, Mo.—p. 194.
Rigid Side Bars in Tibia Lengthening. K. T. Young, Brooklyn. —p. 196.

Muscular Contractures in Wrist and Fingers.—The objective of Steindler's study is to show that muscular contractures are subordinated to biophysical laws. The selection of wrist and finger contractures to demonstrate the operation of these laws was a mere matter of expediency. It is not to be inferred that, in contractures, the other structures of the locomotor system—the bones, joints and ligaments—are not similarly dependent on physical factors. But, in muscular contracture or contracture in the stricter sense, one can define and formulate certain dynamic and static influences operative in producing the pathologic situation. It is this biophysical analysis which makes for a better grasp of the inherent nature of contracture. By recognizing a basic or key element on which the whole complex is built, one can decide on the most efficient point of attack for the correction. The biophysical theory of contracture gives information also as to when and how long mechanical correction is to be applied, and what changes of position conform best to the mechanical situation. Only by understanding the biophysics of these conditions can one become efficient in their management and treatment.

Sympathetic Ganglionectomy and Trunk Resection in Arthritis.—According to Henderson and Adson, it is apparent that there is a group of cases of chronic arthritis in which vasospastic phenomena are seen and are responsible for or aggravate the arthritic symptoms. Sympathetic ganglionec-

tomy and trunk resection offer additional aid in the treatment of these patients, but extreme care should be exercised in the selection of cases. Sympathetic ganglionectomy and trunk resection are indicated for young persons, who have vasomotor phenomena, such as cold, wet, pale or cyanotic extremities, but whose arteries are patent, elastic and not occluded. The operation is not indicated in advanced cases, in which there is marked ankylosis; neither is it indicated when the infectious process is still present. The operation affords the greatest amount of relief in the smaller joints of the extremities, fingers, hands, wrists, toes, feet and ankles. When there is involvement of the larger joints—such as the knees, hips, shoulders and spinal column—little is accomplished either in checking the disease or in ameliorating the symptoms.

Sympathectomy in Vascular Diseases of Extremities.—Robertson states that in Raynaud's disease sympathectomy will relieve the symptoms of the disease and prevent the formation of gangrene. All cases of vascular diseases of the extremities have associated vasospasm in a varying degree. The latter can be relieved by sympathectomy. Sympathectomy leaves no important deleterious effects either in the lumbar or cervicothoracic excisions.

Traumatic Dislocation of Shoulder.—Reich describes twelve instances of traumatic dislocation of the shoulder joint. Eight were carefully studied: first in the cadaver, next by dissection, and lastly on the macerated skeletons. The other four are known only by the skeletons. These twelve lesions emanated from a collection of 1,826 complete skeletons of known individuals. The classic description of the production of traumatic shoulder dislocation is not borne out by these examples. In the original injury the humeral head is forced over the glenoid margin in the region of the subscapular bursa. This is accompanied by either a stubbing fracture of the ventral glenoid margin or a functional disability of the subscapularis muscle, or both. In the subluxation or stub, the healed glenoid margin is no disability but the functional damage sustained by the subscapularis becomes the important feature. The humerus is externally rotated and is slightly eroded on its dorsal aspect adjacent to the greater tuberosity, even though the head never leaves the glenoid cavity. This condition may escape notice or be diagnosed as rheumatism. Subscapularis bursitis seems to have some influence in predisposing the joint to traumatic dislocation through thinning of the glenoid margin. In the true luxations, the head leaves the glenoid cavity and the final category depends on the site of glenoid injury. If the midventral margin is damaged, subcoracoid dislocation results; if the lower ventral margin is affected, subglenoid dislocation occurs. In such conditions the humeral erosion is more or less deep, depending on extent of glenoid damage and muscular action. This humeral erosion apparently continues long after the original pain and muscular spasm have given place to "rheumatism" and muscular contracture. Stubbing fracture of the ventral glenoid margin, old synovitis of the subscapularis bursa, and traumatic functional deficiency in the subscapularis muscle are the three contributing causes to traumatic dislocation of the shoulder, so far as can be ascertained from the author's material. It may be inferred that many of the cases described, especially those classified as stub, were cases of recurring subluxations of the shoulder joint. In view of the fact that the author has definitely demonstrated the presence of bony defect, he believes that operative correction should be planned with view to correction of the subluxation by check ligaments and bone-block operations rather than by capsulorrhaphies.

Liver Meal in Treatment of Amyloidosis.—Whitbeck used powdered whole liver in cases of general amyloidosis secondary to bone tuberculosis. Seven children were given this therapy. One died shortly after the treatment was started. Another child died after fourteen months of treatment, although retrogression of the lardaceous disease was evident. In this instance, probably irreparable changes set in prior to the inception of the therapy. The remaining five showed no clinical signs of amyloidosis after treatment for a period of eighteen months.

Effect of Insulin on Healing of Fractures.—In Stuck's experiment with fracture of the fibula in the rabbit, calcification of the callus between fourteen and twenty-eight days after operation seemed to be slightly more advanced in those animals which received daily injections of insulin than in the control animals. This difference was not detectable grossly; yet it was definite when the site of fracture was examined microscopically.

Chair Test in Examination of Sacro-Iliac Disease.—Yergason suggests the following clinical test as an examination for sacro-iliac conditions, particularly when there is a question of injury or the actual existence of pathologic changes. The patient, who is standing before an ordinary chair firmly held, with the surgeon extending the hand for the patient to grasp, is asked to step up into the chair. It is surprising how many patients accomplish this act with the attention centered on the up-stepping leg, which naturally seems to be the one in which the examiner is interested. With the direction then to step down, the surgeon, still holding the hand, exercises a slight push through the forearm so that the patient steps down unexpectedly, producing a very slight jar, which is transmitted upward through the weight-receiving extremity. The surgeon then changes his hand on the chair and extends the other, repeating the procedure with the opposite leg of the patient. The test has several interesting features. Patients who are uncooperative in many tests seem to have an interest in this. The chair, being large and firm, gives a sense of security and the aid given by the surgeon's hand adds to the feeling of confidence. Practically all patients can accomplish this effort and, without instructions, the patient invariably puts the best foot forward, which means that he steps up with the leg which has the best hip joint, the best psoas or the best glutei. Further, the patient's attention is concentrated on the up-stepping leg and without attention to the aftercoming extremity. If the patient steps down with the foot which was last placed in the chair, the weight is received by that extremity with a slight but definite shock, which increases the shearing stress of the sacro-iliac joint on that side—a down-coming shock, wholly passive, whereas the up-going one is due to muscular effort. With bona fide joint trouble, the patient can hardly be expected to perform this test without complaint. If the surgeon will keep in mind these physiologic mechanisms, he will discover that the sacro-iliac malingerer will step down hard on the foot of the "affected side" without pain.

Use of Auscultatory Percussion for Examination of Fractures.—Lippmann reports that, in certain fractures, auscultatory percussion may be employed as a rapid, painless and always available indicator of the relative position of the fragments and, at a later period, as a method of determining the extent of bony consolidation. This test is of utility chiefly in fractures of the shaft of the femur, humerus and clavicle to supplement roentgen examination as a substitute for it when roentgen facilities are unavailable and to replace it when roentgenography and fluoroscopy are inadequate or inapplicable. Conditions such as the latter are common, particularly in the treatment of fractures of the femoral shaft, so that, even in the proximity of complete roentgen equipment, auscultatory percussion can render great assistance to the fracture surgeon. Auscultatory percussion applied across fractures of the shaft of the femur, humerus and clavicle may be so interpreted as to indicate the presence of a complete fracture, the relative position of the fragments, and, during the postoperative course, the development of bony union. The stethoscope bell and the percussing finger should be applied over bony prominences on either side of the fracture and the sound so elicited compared with that produced by the same procedure on the normal side. Sound alteration constitutes the criterion of the test. Pitch and quality changes result from free vibration of the separate fragments and, accordingly, signify complete fracture or incomplete union. Appreciable diminution in sound intensity indicates poor conduction and reflects absence of end-to-end contact.

Sign of Tuberculous Spondylitis in Pregibbus Stage.—Kofman states that in examining a healthy individual, with his back facing the light and his arms hanging at the sides, there is seen an irregular groove extending along the spine from the neck to the sacrum. This groove varies in depth according to the muscular development of the individual and is enclosed between the two muscular bands of unequal thickness along their course. If the spine is affected, it is observed that these muscular bands diverge more or less, forming a rhom-

boid or oval depression—"Delle." Palpation of the muscles encircling the depression (sacrolumbalis) shows that they are soft and somewhat doughy, and that they do not contract. This is more evident with the patient in a prone position. The author's observation for the last five years has demonstrated this depression to be the location of the future gibbus. Rarely, two or three depressions are present, which is an indication of double or triple localization. An atrophy of the entire back and an absence of the spinal groove, with soft muscles, suggest the presence of a disease of the entire spine. Sometimes there is an interval of two or three years before the gibbus deformity becomes evident, and, in rare instances, the gibbus does not appear at all (spondylitis superficialis anterior of Hoffa), but other manifestations—abscesses, lameness, and so on—occur, which indicate the presence of the probable lesion. The author has observed cases in which the diagnosis of spondylitis was established two or three years in advance, although the roentgenograms (with the exception of a slight narrowing of the intervertebral disk) and the other manifestations did not indicate the presence of a lesion. The appearance of the oval depression, Delle, with the flattening of a definite part of the spinal groove, is not in itself pathognomonic of a tuberculous lesion of the spine but indicates that this part of the spinal column does not participate in the motion of the entire spine; it may be observed in spondylitis and other processes involving the mobility of the spine. The specific sign is the softening of the long muscles of the back. The muscular attachments which arise from the affected vertebrae lose their tonus in the same manner that the quadriceps femoris loses its tonus in tuberculous gonitis. It is interesting to observe that, in case of a favorable turn in the process, the muscles regain their contractility and firmness.

Journal of Industrial Hygiene, Boston

14: 41-80 (Feb.) 1932

*Baltimore Gas Appliance Ordinance and Its Relation to Public Health. W. H. Schulze, Baltimore.—p. 41.

Pressure Chamber Installation for Studying Physiologic Effects of Pressures Varying from Six to Sixty Pounds Per Square Inch Absolute. R. M. Thomson, C. P. Yaglou and A. B. van Woert, Boston.—p. 57.

Control of Silicosis Hazard in Hard Rock Industries: II. An Investigation of Kelley Dust Trap for Use with Pneumatic Rock Drills of "Jackhamer" Type. T. Hatch, Boston; G. S. Kelley and J. W. Fehnell, New York.—p. 69.

Gas Appliance Ordinance.—Schulze discusses the Baltimore gas appliance ordinance. He points out that the increase in the use of gas as fuel attended with the increase in the number of different types of gas burning appliances, with the possibility of the production of carbon monoxide owing to defective construction or improper installation, is connected directly with the general health of the public. Public health officials in several cities have taken cognizance of this possible health hazard from the utilization of gas in homes and, as a result, ordinances have been passed or are under consideration to control the sale and installation of gas appliances. From investigations it is evident that many persons are exposed to varying quantities of carbon monoxide and as a result suffer from illness difficult to identify and of an insidious character. Similarity of the symptoms to those in other minor ailments confuses correct diagnosis of many of these cases. A study of a number of untested, circulating tank water heaters indicates that this type of appliance may produce concentrations of carbon monoxide that are dangerous to health.

New England Journal of Medicine, Boston

206: 151-206 (Jan. 28) 1932

*Reasons for Use of Carbon Dioxide with Oxygen in Treatment of Pneumonia. Y. Henderson, New Haven, Conn.—p. 151.

Colitis Resulting in Obliteration of Lumen of Intestine. F. B. Lund, Boston.—p. 156.

*Study of One Hundred and Two Cases of Atrophic Arthritis: II. Constitutional Defects. M. Smith, Boston.—p. 160.

Modern Laboratory Methods for Early Diagnosis of Pregnancy. M. Davis and Elisabeth W. Walker, Boston.—p. 173.

Cinchophen Poisoning: Report of Three Cases. S. L. Gargill, Boston. —p. 183.

Carbon Dioxide with Oxygen in Treatment of Pneumonia.—According to Henderson, the advantages afforded by the use of carbon dioxide together with oxygen in the inhalation treatment of pneumonia are as follows: 1. Deeper breathing is induced, which prevents the development of occlusion and tends to open parts of the lungs already occluded. 2. Under inhalation of carbon dioxide, morphine or other narcotic drugs may be used more freely to counteract excitement and restlessness. The stimulus to respiration afforded by carbon dioxide tends to counteract the depression of breathing which such drugs otherwise induce. 3. Carbon dioxide in solution becomes carbonic acid and tends to exert a bactericidal action on the pneumococcus and a resolving action on the pneumonic exudate. These effects are best obtained when inhalation of carbon dioxide is combined with administration of morphine or other narcotic and respiratory depressant drugs. While carbon dioxide tends to lower the p_H of the blood and of the pneumonic exudate, it does not decrease the blood alkali or tend to induce an acidosis, but rather the contrary. The article contains an illustration of a tent, which, while suitable for the treatment of pneumonia patients with oxygen, is specially designed for their treatment with a mixture of carbon dioxide and oxygen.

Atrophic Arthritis.—Smith examined a series of 102 atrophic arthritic subjects from the standpoint of constitutional abnormalities, and presents the incidence of these manifestations. It is pointed out that these manifestations are referable to a disturbance of three common systems of the body; namely, the autonomic nervous system, the vascular system and the smooth musculature. Since the disease has its inception almost regularly in a prodromal period which is not arthritic, and since the constitutional signs of this period are so characteristic and prevail and become exacerbated in the arthritic stage, it would appear that the arthritic manifestations are of no more fundamental importance than the constitutional manifestations. The constitutional aberrations in the states of atrophic arthritis and rheumatic fever are discussed briefly, and the inference is drawn that they have a reciprocal relation.

Public Health Reports, Washington, D. C.

47: 75-129 (Jan. 8) 1932

Studies on Biochemistry of Sulphur: XII. Preliminary Studies on Amino-Acid Toxicity and Amino-Acid Balance. M. X. Sullivan, W. C. Hess and W. H. Sebrell.—p. 75.

Histopathologic Changes Produced in Rats by Addition to Diet of Various Amino-Acids. R. D. Lille.—p. 83.

Tennessee State Medical Assn. Journal, Nashville

25: 43-84 (Feb.) 1932

*Malignant Tumors of Thyroid Gland. N. S. Shofner, Nashville.—p. 43.

Transurethral Resection of Prostatic Obstructions. T. R. Barry and F. K. Garvey, Knoxville.—p. 50.

Uterine Hemorrhage and Its Treatment. J. B. Haskins, Chattanooga. —p. 54.

Backache from Urologic Aspect. G. R. Livermore, Memphis.—p. 61.

Malignant Tumors of Thyroid.—Shofner calls attention to the fact that sarcoma and carcinoma occur in the thyroid with sufficient frequency to warrant keeping its possibility constantly in mind. Figures vary from 0.5 per cent to 2 per cent of all thyroids removed. The vast majority of such tumors (approximately 90 per cent) occur in preexisting nodular goiters. The clinical differentiation between benign and malignant tumors of the thyroid is difficult and often impossible. Persons with frankly malignant tumors of the thyroid are doomed to an early death, no matter what form of therapy is employed, though radiation probably is preferable to surgery. The favorable cases are those which are not recognizable preoperatively as malignant but which are diagnosed by the pathologist. The author reports 6 cases of malignant tumors out of 310 thyroidectomies, namely, 2 sarcomas and 4 carcinomas, all developing in preexisting nodular goiters. On the basis of his observations he draws the following conclusions: 1. All patients, of whatever age, presenting themselves with nodular goiters should be advised to have a resection of the gland, except in the presence of some compelling contraindications. 2. In all suspected early cases of malignant tumors, thyroidectomy should be performed and if the tumor proves malignant postoperative radiation therapy should follow. 3. Advanced cases of malignant tumor should have radiation in preference to surgery. 4. The only approach at present to the solution of this problem is in prophylactic removal of nodular goiters.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

54: 377-522 (Dec.) 1931

*Intracranial and Spinal Metastases in Gliomas of Brain. H. Cairns and Dorothy S. Russell.—p. 377.
Congenital Elevation of Scapula (Sprengel's Deformity) with Defect of Cervical Spine Associated with Syringomyelia: Case. F. du Toit. —p. 421.
*Chronic Subdural Hematoma: Study of Eight Cases with Especial Reference to State of Pupil. A. Kaplan.—p. 430.
*Lateral Syndrome of Medulla (Occlusion of Posterior Inferior Cerebellar Artery; Vascular Lesions of Hind-Brain). A. G. Anderson, R. D. Lockhart and W. C. Souter.—p. 460.
Contribution to Cortical Representation of Vision. G. Holmes.—p. 470.
*Reflex-Grasping Associated with Tumors Not Involving Frontal Lobes. P. C. Bucy.—p. 480.
Rate of Conduction in Human Motor Nerve. F. Golla and S. Antonovitch.—p. 492.
Note on Action of Curare in Tetany. H. Hartridge and R. West. —p. 508.

Intracranial and Spinal Metastases in Gliomas of Brain.—Cairns and Russell report eight cases in which a primary glioma of the brain was associated with subarachnoid spinal metastases and, with the exception of two of the cases, with intracranial metastases as well. These cases include the less malignant and more highly differentiated types of glioma, such as astrocytoma and ependymoma, as well as the more primitive and malignant types, such as neuro-epithelioma of the retina, medulloblastoma and glioblastoma multiforme. It is shown that the proximity of a glioma either to the ventricular system or to the basal cisterns is probably as important in promoting metastases as the intrinsic malignancy of the tumor cells. The secondary deposits in the subarachnoid space have room to grow freely, and a study of their cytology sometimes throws considerable light on the nature of the primary growth. Attention is drawn to the alterations in the cerebrospinal fluid and other clinical disturbances that may arise in these cases. The authors emphasize the fact that, since they observed spinal metastases in eight out of twenty-two consecutive full necropsies in cases of glioma, it is evident that the frequency of this process has hitherto been underestimated.

Chronic Subdural Hematoma.—From the study of eight cases of chronic subdural hematoma, Kaplan concludes that this condition is frequently unrecognized despite the fact that it occurs more often than middle meningeal hemorrhage. Experimental and clinical data show that trauma, often trivial, is the important etiologic factor. A rupture of an unsupported cerebral vein as it enters the superior longitudinal sinus will most often follow a blow over the occipital or frontal regions. The surprising latent period in the great number of cases can best be explained by slow and intermittent venous bleeding into the subdural space. The diagnosis of chronic subdural hematoma is based on a history of trauma, which, after a latent interval, is followed by the insidious onset of headache, drowsiness, vomiting and coma. The most characteristic clinical symptom of chronic subdural hematoma is a peculiar lethargic state which seems to alternate from drowsiness to coma, with periods of alertness and surprising response occurring within twenty-four hours or several days. Misleading pyramidal tract signs have been noted frequently in cases with chronic subdural hematoma. A dilated and fixed pupil on one side, even in the presence of a homolateral paresis or bleeding from the opposite ear, points to a lesion on the same side. In seven of the eight cases reported, a unilateral lesion was present, and in one the hematoma was found on both sides. It is believed that, in instances in which there is a unilaterally dilated pupil, an opening should be made first on this side, but if inequality of the pupils has not been observed a bilateral trephine should be done simultaneously even though a hematoma has been disclosed on one side. The author believes that the term chronic subdural hematoma is preferable to pachymeningitis hemorrhagica interna. The latter should be restricted to those instances in which the subdural bleeding has resulted from causes other than trauma.

Lateral Syndrome of Medulla.—Anderson and his associates report a case of lateral syndrome of the medulla in a man, aged 62, exhibiting complete inability to swallow solids or fluids, Horner's syndrome of the right side, paralysis of the right side of the palate, defective sensation of taste on the right side of the tongue, abolition of the nausea reflex, mouvement de rideau of the pharyngeal wall, and defective sensibility to pain and temperature on the left lower extremity and trunk up to the umbilicus. In the light of the conflicting views expressed in the literature, the anatomic, physiologic and clinical features of the case are presented with especial reference to the neurologic mechanism of swallowing, and the condition of the pupils examined at the onset of the illness is contrasted with their subsequent examination, five months later, after partial recovery.

Reflex-Grasping Associated with Tumors.—On the basis of a study of two cases of tumor of the brain in regions other than the frontal lobe in which marked bilateral reflex-grasping was present, Bucy concludes that reflex-grasping in the presence of a marked internal hydrocephalus with increased intracranial tension is of little localizing value. This is particularly true when the sign is present bilaterally. He also believes that bilateral reflex-grasping is at all times of questionable value as a localizing sign.

British Journal of Surgery, Bristol

19: 351-522 (Jan.) 1932

Some Bygone Operations in Surgery: VII. Amputation: Operation on Nelson in 1779. D. Power.—p. 351.
Congenital Lymphangiectatic Fibrous Hypertrophy (Elephantiasis Congenita Fibrosa Lymphangiectatica). D. S. Middleton.—p. 356.
*Localized Phlegmonous Enteritis: Two Cases. C. G. Irwin and S. McDonald, Jr.—p. 362.
*Spondylolisthesis. N. Capener.—p. 374.
*Postoperative Massive Collapse of Lung: Clinical and Experimental Study. D. Band and I. S. Hall.—p. 387.
*Analysis of Two Thousand One Hundred and Twenty-Six Cases of Acute Appendicitis. B. R. Sworn and G. M. Fitzgibbon.—p. 410.
*Radium Treatment of Carcinoma of Breast. G. Keynes.—p. 415.
Effect of Anemia on Reactions of Skin and Tumors to Radium Exposure. J. C. Mottram and A. Eidinow.—p. 481.
Pathology and Treatment of Tuberculosis of Knee Joint. G. R. Girdlestone.—p. 488.
Torsion of Appendix Epiploica of Sigmoid Colon: Three Cases. G. H. Colt.—p. 508.

Localized Phlegmonous Enteritis.—Irwin and McDonald report two cases of acute localized phlegmonous enteritis of streptococcal origin. In common with many of the cases recorded there was a sudden onset associated with a rigor and acute abdominal symptoms suggestive of acute intestinal obstruction. There was a rapidly fatal termination with peritonitis. Vascular obstruction and foreign body were excluded as etiologic factors, and there were no indications of pyemic deposits elsewhere in the body. Pathologic investigation suggests an autogenous infection possibly resulting from local injury of the bowel wall.

Spondylolisthesis.—According to Capener, spondylolisthesis, equally common in men and in women, is of two types. The more usual results from a separation, through a probable congenital defect, of the fifth lumbar vertebra into two portions. Besides the forward displacement of the body of this vertebra, its spine and laminae are displaced backward with the sacrum. The place of trauma in producing the subluxation and the influence of other factors besides lordosis are discussed. The author believes that the sacrum acts as a wedge, the apex of which (the upper and posterior edge) is driven upward and causes a diastasis of the last lumbar vertebra, and that the posterior portions of the lumbar vertebrae take a more active part in the production of spondylolisthesis than is usually recognized. Factors favoring natural arrest of the displacement are described; the surest of these is the formation of a bony buttress from the front of the sacrum. Good lateral roentgen studies are frequently the only means of detecting the very early displacements, which will be found to be more common than is usually suspected. Roentgenologic tests for early cases are illustrated. Mechanically ideal, though technically unsuitable, operative procedures are mentioned and the usual treatment is outlined; this in most cases should first be conservative.

Postoperative Massive Collapse of Lung.—Band and Hall give the records of four clinical cases of postoperative massive collapse of the lung. Experimental evidence is brought forward indicating that certain factors, acting in combination,

may lead to collapse. These are (1) a viscid intrabronchial secretion (viscosity 75 per cent), (2) abolition of the cough reflex, and (3) limitation of respiratory movement. Preventive measures are suggested. Emphasis is laid on the therapeutic value of carbon dioxide inhalations.

Acute Appendicitis.—On the basis of a study of 2,126 cases, Sworn and Fitzgibbon conclude that in all cases of acute appendicitis in which no mass is palpable, immediate surgical treatment is required. In cases with diffuse peritonitis, removal of the appendix is essential. If a palpable mass is present, the best results are obtained by conservative treatment, when this is possible.

Radium Treatment of Carcinoma of Breast.—Experience with interstitial radium treatment of primary carcinoma of the breast in 171 cases over a period of seven years leads Keynes to draw the following conclusions: 1. In general the results of radium treatment compare favorably with those obtained by any other form of treatment, such as pure surgery. In the most successful cases the patients are virtually normal women, and their expectation of life is at least as great as if they had been subjected to a mutilating operation. 2. No exaggerated claim is made for radium treatment, as that it should be used to supplant surgery. It is claimed, however, that radium ought to have a definite place in the treatment of carcinoma of the breast and should often be used instead of or combined with surgery, according to individual circumstances. 3. The place of radium in the treatment will vary according to the stage of the disease and with other circumstances. For very advanced or for inoperable tumors, radium treatment is the treatment of choice. Remarkably good results can sometimes be obtained in apparently hopeless conditions. For the average intermediate operable tumor the psychology of the patient or other circumstances may sometimes demand the orthodox radical operation. This may be followed by prophylactic radium treatment if desired. For unprejudiced patients the radical operation is seldom necessary, since it is justifiable in most cases to use radium alone, or radium combined with a modified operation. If primary radium treatment is not entirely successful, the patient's prospects are not impaired and conservative surgery can usually still be applied. An exception is made in the case of very adipose patients, who are probably unsuitable for radium. For the earliest and smallest tumors the radical operation is unnecessary. Excellent results can be obtained by radium alone or by radium combined with the most conservative surgery. 4. Radium may be a highly dangerous and inefficient weapon if used with insufficient care or knowledge. The author's series of cases was not without disasters, though these were due to lack of experience in attaining the correct dosage rather than to technical faults. With proper care and knowledge, interstitial radium treatment has no serious dangers.

British Medical Journal, London

1: 85-128 (Jan. 16) 1932

*Treatment of Tetanus, Diphtheria and Other Neurotropic Diseases by Method of Phylaxis. R. Cruchet.—p. 85.
*Diagnosis of Drunkenness from Excretion of Alcohol. S. Smith and C. P. Stewart.—p. 87.
Ear Complications of Influenza. J. F. O'Malley.—p. 90.
Diseases of Hip Joint and Its Immediate Neighborhood. J. F. Brailsford.—p. 92.
Note on Epidemiology of Tinea Capitis. G. H. Percival.—p. 93.
Puerperal Sepsis and Prophylactic Vaginal Antisepsis. C. L. Somerville.—p. 94.
Undulant Fever in Northern Ireland. J. S. Baxter.—p. 96.
Remarks on Spectrophotometric Curves of Blood Pigments. W. Marshall.—p. 98.

Treatment of Neurotropic Diseases.—Cruchet has treated five children with tetanus by the phylactic method of chloroform anesthesia. Three of the children recovered. He has also treated two other cases in men with complete success. In two cases in children the contractures gradually disappeared, the patient lost his pain and trismus, and became quiet and drowsy; life was prolonged, but death finally ensued. In other words, the disease ran the same course as it has been observed to do when chloral hydrate is given in large doses. Nevertheless, the author is convinced that this method will give still better results if it is practiced according to the following rules: 1. The injections of antitetanic serum should be given either immediately before or during chloroform anesthesia. When the intraspinal route is utilized, subcutaneous injections of 50, 80 or 100 cc. should also be given from the start. In fulminating cases, the serum should be given intramuscularly or even intravenously. The treatment should end with a subarachnoid injection of from 10 to 30 cc., according to the severity of the case. It is sometimes necessary to repeat the treatment a second time within the twenty-four hours, but as a rule it need be given only once daily. 2. The mistake that is most frequently made is to postpone the phylactic treatment too long, to give it in the last and final resort. It should, on the contrary, be commenced at the onset of the disease, before the nervous system is too much involved, and when the body has some power of resistance still left. The preliminary anesthesia by chloroform impregnates the lipoids of the nervous system in such a way as to render it impossible for the toxin to become fixed. In other words, chloroform acts as a protective or phylactic agent.

Diagnosis of Drunkenness from Excretion of Alcohol.—Smith and Stewart carried out a number of experiments on the excretion of alcohol by human subjects. In all these experiments the excretion both by the lungs and by the kidneys was measured, and the condition of the subjects with respect to intoxication was observed by various psychologic tests and by the routine methods of examination used by police surgeons. The results of the experiments do not support the idea that estimation of the concentration of alcohol in either breath or urine is a valuable aid in diagnosis. Obviously, with high concentrations, such as 0.4 to 0.5 per cent, there is no doubt as to the diagnosis, but in these cases the circumstances are such that even without the analysis of urine there is no difficulty. Carter takes 0.2 per cent as the dividing line above which a diagnosis of drunkenness is justified, and similar standards are set up by others, but to the authors this appears a dangerous procedure. They have met a case of undoubted drunkenness—a semicomatose condition—in which the concentration of alcohol in the urine never reached this level, and that in an almost teetotal subject who drank 250 cc. of whisky. Though this does not constitute a serious indictment of the validity of the method of diagnosis, since it is claimed only that a man showing over 0.2 per cent of alcohol in the urine is drunk, and not that one showing less than this is sober, other of the results do invalidate the test; for in certain of the experiments the subjects were classed as sober by the police surgeon and showed no evidence of being affected by alcohol when tested by psychologic methods but were nevertheless excreting urine containing more than 0.2 per cent of alcohol. Hence, with a urinary alcohol concentration of about this figure, the diagnosis is extremely doubtful; and yet it is just here, near the borderline between drunkenness and sobriety, that the test would be most useful. The authors are forced to the conclusion, therefore, that as a means of diagnosis of drunkenness urine analysis is valueless, though as a means of determining the minimum amount of alcohol consumed it may on occasion prove useful.

Journal of Anatomy, London

66: 157-281 (Jan.) 1932

*Osteogenic Capacity in Vitro of Periosteum and Endosteum Isolated from Limb Skeleton of Fowl Embryos and Young Chicks. H. B. Fell.—p. 157.
Uterus of Cavia After Intravitam Staining with Trypan Blue. T. Nicol.—p. 181.
Monstrous Twin Embryo in Lizard, Tiliqua Scincoides. R. A. Willis.—p. 189.
Intraglandular Cleft of Pituitary Body and Its Connections. J. Brander.—p. 202.
*Function of Intra-Articular Fibrocartilages, with Especial Reference to Knee and Inferior Radio-Ulnar Joints. M. A. MacConaill.—p. 210.
Tracheobronchial Lymphatic Glands. H. P. Nelson.—p. 228.
Potency of Pharyngeal Entoderm. H. H. Woollard.—p. 242.
Abdominal Pregnancy in Cat. R. H. Hunter.—p. 261.
Encephalocele in Nasal Region. S. Abd-el-Malek.—p. 264.
Anatomic Note: Persistent "Left Superior Vena Cava." "Left Duct of Cuvier" and "Left Horn of Sinus Venosus." B. N. Basu.—p. 268.

Osteogenic Capacity in Vitro of Periosteum and Endosteum.—Fell reports that periosteum removed from 6-day embryonic limb-bone rudiments is able to ossify in vitro, although by the conditions of the experiment it is deprived of its normal association with cartilage and of a blood and nerve supply. Periosteum removed from 10-day embryonic limb bones is also able to form bone in vitro. Periosteum from late

embryos and young chicks may grow profusely in vitro but ossifies in only rare cases, probably owing to severe damage being inflicted mechanically on the osteoblastic layer when one strips away the tough, firmly attached fibrous membrane. Undamaged (endosteal) osteoblasts derived from the haversian spaces of late embryonic and early postembryonic tibial bone readily form bone in vitro.

Function of Intra-Articular Fibrocartilages. — MacConaill shows by reference to the theory of lubrication that intra-articular fibrocartilages are to be related primarily to the synovial fluid rather than to the articular surfaces of the bones. They act to bring about the formation of wedge-shaped films of synovia in relation to the weight transmitting parts of joints in movement. These wedges are narrowed in the direction of motion and are necessary for weight transmission. They are to be found in joints where thrusts are likely to bring about a premature approximation of the joint surfaces. Preparations are described of knee and inferior radio-ulnar joints, which demonstrate the action of such cartilages. These also show that the cartilages are congruent with articular surfaces only in the "weight-carrying" position of the joints.

Journal of Tropical Medicine and Hygiene, London

35: 1-16 (Jan. 1) 1932

Nuclear Structure of Malignant Tertian Malarial Parasite. J. G. Thomson.—p. 1.
Housing and Malaria. C. Lane.—p. 4.

35: 17-32 (Jan. 15) 1932

Nephritis, Nephrosis and Characteristic Hepatonephrosis of Yellow Fever. F. Rho.—p. 17.
Observations on Bacillus Columbensis Fever (Castellani's Fever). Report of Six Cases Occurring in Erithrea. A. Marmo.—p. 20.
Minor Tropical Diseases. A. Castellani.—p. 24.

Lancet, London

1: 65-114 (Jan. 9) 1932

*Injuries of Tendons and Muscles. H. C. Edwards.—p. 65.
Mechanism of Diastolic Blood Pressure. C. B. Rossiter.—p. 71.
Acute Rheumatism and Sedimentation Rate. W. W. Payne.—p. 74.
Erythrocyte Sedimentation Rate in Rheumatic Fever. F. Bach and N. G. Hill.—p. 75.
*Pepsin Therapy of Gastric and Duodenal Ulcer. K. Glaessner.—p. 77.
*Low Spinal Anesthesia. J. K. Hasler.—p. 80.
Divergence Between the Biologic and Gamma Ray Effectiveness of Radium Tubes. S. Russ and G. M. Scott.—p. 82.

Injuries of Tendons and Muscles.—Edwards calls attention to the fact that, by virtue of its power of contraction, muscle may of its own accord be responsible for damage to itself or to its tendons of origin and insertion. Under normal conditions the force of contraction is balanced by the tensile strength of the muscle and its attachments, so that the most powerful contraction of the largest muscle may be carried out without fear of injury. If, however, abnormal conditions are present which will reduce the tensile strength or momentarily increase the contractile power, rupture at some point between the origin and the insertion of the muscle may occur. The importance of the contractile power of muscle in relation to injury does not end here, however. A contracted muscle is less able to escape injury than a relaxed one, a fact well appreciated by the professional clown, who, by a trick of relaxing his muscles, escapes from the most incredible falls without injury. A muscle, when struck, contracts. Part of any resulting injury is due to the blow and part to the contraction, and it is impossible in most cases to assess the relative importance of the blow and of the contraction in determining the extent of the injury. When a rider jumps into the saddle, the adductors of the thigh contract when the thighs come into contact with the sides of the saddle, but a moment later the thighs are forced apart as the body falls heavily into the saddle, and, lastly, more violent contraction of the adductors may be made to retain the seat, and rupture of the adductor longus may occur. In view of these facts, it is impossible to arrive at a satisfactory classification of muscle and tendon injuries from the etiologic standpoint, and the attempts to do so—many ingenious, all unwieldy and inaccurate—bear evidence to this. As a classification is essential to form a basis for discussion, the author uses the following, which, though admittedly incomplete, has at least the virtue of simplicity. 1. Closed, or subcutaneous injury: (*a*) from external violence (direct and indirect); (*b*) from muscular violence. 2. Injury through open wounds.

Pepsin Therapy of Gastric and Duodenal Ulcer.—According to Glaessner, pepsin injection therapy can bring about an objective and subjective cure in about two thirds of the cases of uncomplicated duodenal and gastric ulcer. Of the last 100 cases observed by him, more than half showed an improvement of the acid values, about three fourths one of the roentgenogram and four fifths one of the weight curve. Remittent treatment is recommended; in addition, only indifferent medicines and a plentiful diet are prescribed. Only 6 per cent of the patients had to undergo operation. Other ulcer formations also (mucous membrane, skin, decubitus, intestinal) may be cured by this treatment. It is a specific therapy and depends more on hormonal factors than on the action of irritants.

Low Spinal Anesthesia.—Hasler states that for operations on the perineum low spinal anesthesia is a highly satisfactory method of producing anesthesia. The anesthetic is easy to administer, rapid in action, and provides good anesthesia limited to the area of operation. There is no drop in blood pressure, and the condition of the patient remains good throughout. The author believes that these advantages should be applicable to 100 per cent of cases.

1: 115-168 (Jan. 16) 1932

*Some Effects of Trauma on Nervous System. C. M. Hinds-Howell.—p. 115.
Treatment of Anemias. Janet M. Vaughan.—p. 122.
*Addison's Disease Treated with an Extract of Suprarenal Cortex: Three Cases. H. W. Benham, Mary Fisher, I. More and C. J. L. Thurgar.—p. 125.
Blood Sugar Curve in Mental Cases. R. Ström-Olsen.—p. 128.
Value of Kline Test for Syphilis. T. E. Osmond and K. E. Hughes.—p. 130.

Some Effects of Trauma on Nervous System.—According to Hinds-Howell, injuries of the head take a prominent place among traumatic causes of nervous disorders. A severe blow on the head, whatever its origin, may produce the symptoms of concussion or of cerebral compression. It may cause no anatomic damage on the one hand, or, on the other, it may give rise to fracture of the skull, hemorrhage, or contusion of the brain. Depressed fractures or perforating wounds may in addition cause laceration of the cerebral tissues. Simple concussion results in loss of consciousness of a quite transient character. In any case in which loss of consciousness is prolonged, it is safe to assume that something more than simple concussion has occurred and that there has at least been some contusion of the brain, with or without serious hemorrhage. It is important to recognize the site of this hemorrhage. It may be extradural, e. g., when the middle meningeal artery is ruptured, subdural, or subarachnoid. In extradural hemorrhage with concussion, the patient regains consciousness and there is then a period in which symptoms may be slight or nonexistent. When symptoms of concussion are absent there may at first be nothing to indicate anything serious; then after a longer or shorter period, known as the lucid interval, evidence of pressure appears, which may be manifest in focal symptoms alone, or progress with continuing hemorrhage to the full picture of cerebral compression. Such symptoms are quite familiar: unconsciousness deepening into coma, bounding pulse, rising blood pressure, pupils usually dilated, and stertorous respiration. Death follows inevitably from respiratory failure unless relief from the compression is obtained. When there is subdural or subarachnoid hemorrhage, the injury to the skull has nearly always been severe and there is often a fracture. The venous sinuses may be torn through, and hemorrhage from superficial cerebral vessels may occur. The brain is often contused or lacerated as well. Under these circumstances the clinical picture is likely to differ materially from that of uncomplicated cases of extradural hemorrhge. As the blood usually diffuses freely through the subdural space, focal symptoms are rare as compared with cases of extradural hemorrhage, and symptoms of cerebral irritation and compression are early. The lucid interval, which may be a characteristic of extradural hemorrhage, is often absent or brief. An interesting condition is localized subdural hematoma. The cases in which this occurs are often those in which the head injury has appeared to be comparatively trivial. After the initial shock the patient seems to recover, but usually not completely. One is often told by relatives that the patient "never seemed to get quite right." But, after a period varying from a few days to several weeks,

symptoms of a focal lesion begin to make their appearance, in addition to those of headache, irritability and giddiness, which may be already present. Gradually the symptoms of increasing cerebral compression develop, and unless they are relieved by operation the patient becomes comatose and dies.

Addison's Disease Treated with Extract of Suprarenal Cortex.—Benham and his associates report three fatal cases of Addison's disease. An aqueous epinephrine-free extract of the suprarenal cortex was given intravenously in all three cases resulting in definite improvement in two which was not, however, sustained permanently after cessation of the treatment: the relapses did not receive prompt and adequate treatment with the cortical extract. Certain toxic effects are described in two of the cases and also in a subject in normal health. As a result of chemical investigations, the trace of protein present in the extract is suggested as the probable cause of these untoward effects, which resembled on the whole those seen in protein shock.

Archives d'Ophthalmologie, Paris

48: 801-880 (Dec.) 1931

Cataract in Still-Water Fish Consequent to Parasitic Invasion of Crystalline Lens. P. Lewis.—p. 801.
*Sympathetic Ophthalmia and Treatment. L. Dor.—p. 811.
Congenital Bilateral Paralysis of Lateral Movements of Eyes. A. Colrat.—p. 822.
Optic Iridectomy Should Be an Exceptional Operation. C. Roche.—p. 825.
New Instrument for Dacryocystectomy. I. Neuschuler.—p. 829.

Sympathetic Ophthalmia and Treatment. — After a review of the literature, Dor asserts that in sympathetic ophthalmia in which the injured eye retains some vision one should not enucleate it but should attempt to cure both eyes. Enucleation performed immediately after an accident has a definite prophylactic action, but when fifteen days has passed it is too late to practice enucleation. If sympathetic ophthalmia is going to develop it will do so and it may or may not heal, but it is not the enucleation of the injured eye that determines the cure and one should remove only those injured eyes that are destined to remain painful or useless.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Bucarest

13: 99-119 (Oct.) 1931

Acute Streptococcus Lymphatic Leukemia. C. Bacaloglu and M. Enachesco.—p. 99.
Abscess of Lung Treated by Artificial Pneumothorax. N. Lupu and Stoicesco.—p. 102.
*Pathogenesis of Diabetes Insipidus. A. Crăciuneanu, R. Papazian and I. Daniel.—p. 113.

Pathogenesis of Diabetes Insipidus.—Crăciuneanu and his co-workers discuss the case history of a patient with diabetes insipidus. They studied the effect of an extract of the posterior lobe of the hypophysis, sodium chloride, experimental thirst, experimental diaphoresis and venesection, with or without ingestion of water, in relation to changes in the blood, tissues and kidneys. They found a pronounced difference in the water exchange in their patient with diabetes insipidus compared with a normal individual. Abundant diuresis during experimental thirst was the only factor in favor of a disturbance in the process of elimination. The facts in favor of the disturbance in the process of fixation of water were the great loss of tissue water, the diminution of extrarenal loss, the positive proof of the cutaneous test for hydrophilia and the negative proof for experimental diaphoresis after marked dilution of the blood. They conclude that the disturbances in water exchange in diabetes insipidus are probably the consequence of a dysfunction of the kidneys and tissues.

13: 121-144 (Nov.) 1931

Presentation of a Case of Angina Pectoris in Which Operation Was Performed Nine Months Previously by Suppression of the Pressor Reflex. D. Danielopolu, V. Savesco and V. Steopoe.—p. 123.
Case of Infarct of Myocardium. S. Stoicesco.—p. 131.
*Angina Pectoris and Auricular Fibrillation. L. Caffé and L. Schwartz.—p. 137.
Case of Extrasystole as Basis of Complete Arrhythmia. I. Marcou.—p. 140.

Angina Pectoris and Auricular Fibrillation.—Caffé and Schwartz discuss the case history of a patient with auricular fibrillation which had lasted seven years. Throughout the disease the fibrillation was accompanied by anginal attacks which became more intense as the disease progressed; neither fibrillation nor attacks of asystole modified the anginal pains. The authors believe that the anginal attacks were initiated as follows: The heart, insufficiently irrigated (necropsy revealed plaques of atheroma on the coronary arteries), received even less blood during the attacks of tachycardia because of the shortening of the diastolic period. This insufficient irrigation produced by two factors, the one anatomopathologic and the other physiopathologic, caused myocardial intoxication and brought about the anginal attacks.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

48: 1-35 (Jan. 18) 1932

Colibacillary Septicemia "Post Abortum": Putrid Pyopneumothorax Fistulized in the Bronchi. A. Lemierre, A. Laporte and D. Mahoudeau-Campoyer.—p. 7.
*Agranulocytosis After Two Injections of Neoarsphenamine. Cassoute, Poinso, Zuccoli, Montus and Gueirard.—p. 14.
Humoral Syndrome of Nephrosis in Course of Chronic Nephritis and Its Influence on Evolution of Edema. P. Abrami, Robert-Wallich and J. Fouquet.—p. 17.
Amylosis: Evolution of Renal Syndrome; Cytologic Study of Liver. M. Labbé, R. Boulin, I. Bertrand and L. Justin-Besançon.—p. 24.

Agranulocytosis After Two Injections of Neoarsphenamine. — Cassoute and his co-workers report that their patient presented the clinical aspect of agranulocytosis with the toxi-infectious, necrotic, buccopharyngeal and cutaneous necrotic syndromes. There was a leukopenia, slight anemia with thrombopenia, but no hemorrhagic accidents. During recovery there was a distinct eosinophilia. The agranulocytic angina appeared twenty days after the injection of 0.15 Gm. and, two days later, 0.3 Gm. of neoarsphenamine. The unusual recovery was probably due to the minimal quantity of neoarsphenamine injected and very likely due to the absence of a hemorrhagic syndrome and the stigmas of humoral dyscrasia. Their observation had one clinical peculiarity, namely, the presence of a transitory cardiorenal syndrome characterized by a left bruit de galop and then by a murmur of functional mitral insufficiency, which disappeared rapidly of its own accord. Examination of the renal apparatus did not reveal albuminuria. Azotemia, however, was present. At the onset there was an extreme oliguria, but it did not persist.

Bulletin Médical, Paris

45: 909-930 (Dec. 26) 1931

*Icterus of Biliary Lithiasis. P. A. Carrié.—p. 913.
Hepatomegaly Syndrome with Persistent Fever. G. Durand.—p. 919.
Buccal and Cutaneous Signs in Cholecystitis and Duodenal Ulcer. J. Dalsace.—p. 925.
Cholecystostomy or Cholecystectomy? B. Desplas.—p. 926.

Icterus of Biliary Lithiasis.—Carrié asserts that biliary lithiasis is a disease that is commonly icterogenic. Jaundice may be present in all the periods of its development; it may assume various clinical aspects and according to the individual case present a highly variable prognosis. The author distinguishes premonitory icterus of lithiasis, transitory lithiasis, chronic lithiasis and grave lithiasis. 1. Premonitory jaundice of lithiasis appears ten, fifteen, twenty years before all other clinical symptoms indicating lithiasis, most often in adolescence, sometimes in infancy. It resembles acute apyretic (catarrhal) icterus or common benign infectious jaundice in which the symptoms are not singular. An hereditary tendency is sometimes present. Sometimes the icterus is present during the lithiasis; sometimes it precedes the lithiasis. The biliary calculi should be studied in the early development. One worker (Rowsing) finds that the young concretions are formed by a black calcium pigment that is not bilirubin but a related pigment "bilihumin." Old calculi show that the pigmentary calculus is secondarily infiltrated with cholesterol and the small calculus becomes a large white cholesterol calculus containing traces of the black pigment. Bilihumin is possibly secreted by the liver, precipitated in the intrahepatic bile ducts and then passes with the bile into the gallbladder, where the calculi form. 2. Regardless of whether the icterus is abortive or established, the jaundice is of short duration. This is a transitory infectious state that complicates lithiasis with involvement not of the biliary canaliculi but of the hepatic cells with retention of bile. It is a question of secondary benign infectious icterus. The author believes there may be in this condition a relationship to

acute congestive pancreatitis. 3. Chronic icterus is characterized by the retention of biliary calculi in the common bile duct, mechanical obstruction and total or almost total retention of bile. Obstruction of the common bile duct is the first manifestation of lithiasis; but the painful phenomena cannot always be considered symptomatic. Icterus in patients with pancreatic neoplasms is progressive, permanent and without remissions; on the contrary, the jaundice in lithiasis of the common bile duct undergoes remissions which are characterized by attenuation of the cutaneous icterus, return of color and clear urine. Difficulty in diagnosis is sometimes increased when biliary lithiasis is complicated by chronic pancreatitis with characteristics simulating those common to neoplasms of the head of the pancreas. All the various clinical symptoms should be considered in the diagnosis. 4. Grave icterus is the termination of the biliary lithiasis. It may appear in the course of obstruction of the bile duct, as a terminal episode of chronic icterus or in nonobstructive lithiasis of the common bile duct. There are two phases, the first occurring as a mechanical consequence of obstruction, the second occurring under the combined influence of stasis and infection. In considering treatment the author asserts that a slight catarrhal icterus once cured should not be forgotten, for it can weaken the liver for the entire life and perhaps cause a subsequent biliary lithiasis. The dietary regimen should include cooked fat, eggs, game and alcohol. Pyretotherapy is advised during the month following jaundice. Repetition of transitory lithiasis with possible infection of the liver should be a sign of alarm and indicate surgical intervention. Surgical intervention is also preferable in chronic lithiasis. During treatment and observation the patient should be kept on a lactovegetarian regimen; he should be given medicaments such as sodium salicylate, methenamine and olive oil. Loss of weight and fever are indications for surgical intervention.

Gynécology et Obstétrique, Paris

24: 681-756 (Dec.) 1931

Surgical Utilization of Biologic Test for Pregnancy. R. Proust and Lejeune.—p. 681.
*Guanidinemia in Relation to Childbirth. R. Malmejac.—p. 689.
Sacciform Dilatation of Lower Segment of Gravid Fibromatous Uterus. G. Muller.—p. 730.

Guanidinemia in Relation to Childbirth.—Malmejac studied the guanidine content of the blood before and after parturition in the normal woman and in the woman with pathologic conditions such as eclamptism and eclampsia. His conclusions are as follows: 1. In the course of normal childbirth there is a tendency to hepatoparathyroid dyssynergia which is related to the number and the time of pregnancies and to previous pathologic disturbances; but this is not manifested clinically since the body tends to reestablish glandular equilibrium. 2. There exists most certainly in the course of pathologic childbirth, and in particular in eclamptism and eclampsia, an evident glandular dyssynergia which is indicated by definite pathologic phenomena; namely, accumulation of toxic products, such as guanidine, in the blood, and a hypocalcemia parallel to the hyperguanidinemia. 3. Recognition of these facts should lead to treatment that would tend to neutralize the toxic action of the guanidine and reestablish the normal calcium level. 4. Glandular insufficiency can be counteracted by the administration of organ extracts, complemented by intensive calcium medication. Roentgen therapy seems to reinforce the curative effects.

Journal de Chirurgie, Paris

39: 1-160 (Jan.) 1932

Arthrodesis for Coxalgia: Indications and Technic. A. Richard and A. Elbim.—p. 1.
*Osteitis of Flat Bones of Cranium Subsequent to Lesions of Soft Parts. F. D'Allaines and J. Hussenstein.—p. 47.

Osteitis of Flat Bones of Cranium.—D'Allaines and Hussenstein class acute osteitis of the vault of the cranium under true acute osteomyelitis, osteomyelitis secondary to suppurations of the accessory nasal sinuses and traumatic osteitis. They do not believe the term osteomyelitis is exact when applied to bony infection of the cranial vault subsequent to traumatic or nontraumatic infections of the teguments. Most often the condition is osteitis of the external table; the diploe and the bone marrow are invaded only secondarily. Infection of the soft tissue spreads to the bone gradually; it is difficult to say whether the spread is continuous or through the intermediary of vascular anastomoses. Infection limited to the superficial layers (with intact epicranial aponeurosis) will not spread to the bony layer. Suppurations in the subepicranial space, limited externally by the aponeurosis and internally by the periosteum, are not accompanied by bony suppuration, even in cases of extensive and prolonged severe suppurations. The symptomatology of osteitis of the cranium is distinct from the first days of its clinical appearance. The symptoms of pain, elevation of temperature, and local signs are characteristic. Osteitis of the cranium, essentially chronic, develops very slowly toward the formation and elimination of the sequestrum. Osteitis may be consecutive to a suppuration of an infected hematoma of the scalp. Endocranial complications may include extradural abscess, abscess of the brain, thrombophlebitis of the sinuses, and meningitis. Treatment depends on early diagnosis and does not differ from the treatment in other types of osteitis of the cranium. Trepanation may extend through the external table and the superficial coat of the diploe and not reach the internal table at all; and, again, the depth of the infection may necessitate trepanation to the dura mater. Endocranial complications are treated gradually, from the superficial to the deep regions.

Lyon Médical

148: 729-764 (Dec. 20) 1931

*Effort Pulmonary Edema: Abortive Forms of Angina Pectoris. M. L. Gallavardin.—p. 729.

Effort Pulmonary Edema.—Gallavardin reports an instance of solitary effort pulmonary edema in which there was no mitral stenosis and which could not be explained by the presence of a cardiopathy habitually accompanied by dyspnea. The attacks of pulmonary edema appeared suddenly in the presence of circumstances in which effort as well as atmospheric conditions (cold and wind) played a part, and lasted from five to ten minutes. The author states that if one considers cardiac insufficiency as a whole and cardiac death one can recognize the existence of two distinct series of manifestations which terminate in the ultimate failure of the myocardial function. These are the dyspneic series due to the primary cardiopathies and the anginal series due in the most characteristic instances to a disturbance in the coronary irrigation and ending only secondarily in myocardial insufficiency. The case discussed belongs to the anginal series. The solitary and characteristic attacks of effort pulmonary edema ought to be considered as a sort of nonpainful equivalent of an edematous form of angina pectoris.

Paris Médical

2: 33-44 (Jan. 9) 1932

*Accidents in Gold Therapy of Pulmonary Tuberculosis. P. Ameuille and V. Hinault.—p. 33.
Motor and Psychic Development of Child. E. Pichon.—p. 38.

Accidents in Gold Therapy of Pulmonary Tuberculosis.—Ameuille and Hinault state that the principal accidents during gold therapy are gastro-intestinal, cutaneomucous, and renal and articular pains, neuritis with muscular atrophy and thermic elevation. Most of the accidents occur in the course of treatment but sometimes after the cessation of treatment. The accidents that occur during gold therapy are analogous to those that occur in other metallic (mercury, arsenic, bismuth) intoxications. They do not depend on dosage; the toxicity may vary for the same dose in different individuals. Some patients have a predisposition for these accidents, and the recognition of such predispositions should constitute a contra-indication for gold therapy. But diagnosis is hardly possible *a priori*. The author does not believe that the elevation of temperature after treatment designates an aggravation of symptoms in chronic tuberculosis of the adult, nor is there a specific aggravation in the presence of hemoptysis or pleurisy; however, laryngeal lesions may be aggravated but do not necessarily constitute a contra-indication for gold therapy. Gold therapy should be avoided in acute tuberculosis and in conditions in which the therapeutic action is uncertain. The sensitivity of tuberculous lesions to gold therapy is not related to the tolerance of the patient. It is not certain that the doses tolerated best are the most efficient. In the treatment, the authors recommend the prompt administration of large doses, and their repe-

tition and suspension as often as is necessary. The authors have administered gold therapy to 1,800 patients. Two hundred and fourteen of these were particularly watched during their entire treatment; there were only ten instances in which the gold therapy had to be discontinued. In the treatment of accidents during therapy, the authors consider autohemotherapy, hepatic and splenic opotherapy, intravenous calcium chloride, epinephrine, intravenous sodium bromide and the daily administration by mouth of 0.5 Gm. of dextrose. They believe firmly in the effectiveness of gold therapy and that grave accidents due to treatment are extremely infrequent.

Pratique Médicale Française, Paris

12: 427-472 (Dec.) 1931

Syphilitic Radiculitis. H. Roger.—p. 427.
*Cerebrospinal Hypertension in Closed Traumatisms of Cranium. M. Arnaud.—p. 452.
Peduncular Syndromes. Albert-Crémieux.—p. 461.

Cerebrospinal Hypertension in Closed Traumatisms of Cranium.—After eight years of study, Arnaud has come to conclude that the majority of the symptoms, disclosed during a clinical examination of a recent cerebral injury, are due to traumatic changes that act directly or indirectly on the cerebrospinal fluid itself, on the organs producing it, or on the conducting spaces and canals that normally permit its free circulation. Among the changes in the cerebrospinal fluid, the author includes disturbances due to increase in tension, and the disturbances most frequently noted in hypertension. He recalls the following fundamental symptoms: cephalalgia, vertigo, vomiting, sleeplessness, and psychic disturbance; and he secondarily includes motor, sensory and sensorial disturbances, reflex, thermic and visceral disturbances, and disturbance in the endocrine synergias. The presence of a complete syndrome is exceptional. The symptoms are often foreign to those due to hypertension of the cerebrospinal fluid. The syndrome of traumatic intracranial hypertension is different from that found in cerebral neoplasias. The signs seem to indicate a true "traumatic poliobulbar" syndrome, which is often present when the cerebrospinal tension has returned to normal. The author reviews two case histories; one case is an example of distortion due to hypertension confirmed definitely with the manometer and the other case indicates an absence of the clinical signs of hypertension, but with distinct hypertension in the cerebrospinal fluid. The author concludes that intracranial hypertension cannot always be determined by clinical examination alone. One should in every case interpret the manometric indications and include an ocular examination.

Presse Médicale, Paris

40: 41-56 (Jan. 9) 1932

*Hematopoietic Power of Carotene. L. Binet and M. V. Strumza.—p. 41.
Gastroduodenal Juice. Léon-Meunier.—p. 42.
Etiology of Acute Disseminated Myelitis. L. van Bogaert.—p. 44.

Hematopoietic Power of Carotene.—Binet and Strumza discuss the preparation and the physiologic and especially the hematopoietic effects of carotene. They recall the present-day theories which attribute to carotene an important and indispensable part in animal growth and which class it as provitamin A which is transformed in the human or animal organism into vitamin A. They studied the regeneration of blood in thirty-two dogs and made parallel observations on the total number of red blood cells and the hemoglobin content. The results seem sufficiently significant for the authors to conclude that in anemic dogs the ingestion of carotene distinctly facilitates blood regeneration.

40: 81-96 (Jan. 16) 1932

Chronic Forms of Meningococcus Infection. H. Roger and Y. Poursines.—p. 81.
*Streptococcus Thrombophlebitis in Right Upper Limb. M. Chifoliau and A. Folliasson.—p. 84.

Streptococcus Thrombophlebitis in Right Upper Limb.—Chifoliau and Folliasson describe in detail a case history in which thrombophlebitis of the right upper arm was promptly cured by segmental resection of the thrombosed axillary vein. The patient presented a clinical picture in which the principal vein of the upper limb was obliterated from the clavicle to the elbow and the venous circulation was almost stopped. Segmental resection of the vein followed by ligature of both ends led to a rapid disappearance of the edema and the functional impotence of the limb. So-called effort or traumatic thrombophlebitis has an infectious origin—the clot in the instance described contained streptococci. The authors believe that the condition described is something more than simple mechanical obliteration of the vein. The intervention is really a sympathetic neurectomy; the pathologic physiology of the veins can be related to the pathologic physiology of the arteries; venous resection influences the periarterial sympathetics, and the arterial wall is freed from the edema that infiltrates it. In the lymphatic network of the limb, the intervention has permitted drainage of the stagnant lymph of the thrombosed perivenous lymphatics. The author believes that the results warrant the institution of surgical treatment, which may hasten cure and avoid more or less important sequelae.

Revue d'Actinol. et de Physiothérapie, Paris

7: 689-760 (Nov.-Dec.) 1931

Several Cases of Epididymotesticular Tuberculosis Treated by Roentgen Rays. Jaudel.—p. 689.
*Action of Néon Light Irradiation on Organism. R. Hickel.—p. 700.

Action of Néon Light Irradiation on Organism.—Hickel used néon irradiation in the treatment of fifty-five patients, mostly children with hypotrophic or anemic constitutions. He noted that the weight increased, the blood became normal and the child became more lively. Certain individuals demonstrated peculiarities in response to treatment: some patients, with exophthalmic goiter, reacted unfavorably. Néon seems to possess a eutrophic action. The author believes that in the future it will be possible to compare this action to the action of ultraviolet rays, with which it might perhaps be associated.

Boll. e Memoria d. Soc. Piemont. d. Chir., Biella

1: 1193-1240 (Dec. 19) 1931

Mycosis of Cheek Due to Penicillium Crustaceum: Case. P. Croveri and P. C. Borsotti.—p. 1195.
*Total Traumatic Rupture of Choledochus Dating Back Nine Months. B. Quarella.—p. 1207.
*Congenital Scoliosis Due to Anomalous Fetal Position: Case. A. Fusari.—p. 1215.
Foreign Body in Thoracic Esophagus for Twenty-Eight Days: Extraction by Means of Inferior Cervical Esophagotomy. M. Donati.—p. 1220.
*New Treatment for Varicose Ulcer. L. Biancalana.—p. 1233.
Intestinal Obstruction in Loop Held in Sac of Irreducible Hernia: Case. A. Turco.—p. 1237.

Total Traumatic Rupture of Choledochus.—Quarella points out that complete rupture of the choledochus due to penetrating abdominal injuries is rare. An external fistula with total derivation of the bile, following such a lesion, was supported by a patient for nine months, giving rise to a progressively grave condition characterized by a severe loss of weight, an intense icterus, and stenosis of the fistulous tract. The patient, aged 38, was struck, July 17, 1930, in the right hypochondrium by a block of steel with two long projections, one of which produced a penetrating wound of the abdomen with an opening near the costal border and close to the lateral margin of the rectus abdominis muscle. A right pararectal laparotomy was performed under ether anesthesia. A large wound, involving the margin of the liver with a hemoperitoneum, was disclosed and sutured with catgut. After exploration with negative result, the abdomen was partially closed, a Mikulicz drain being left in position. An intense icterus developed. The sixth day, on removal of the drain, there was an abundant evacuation of thick, dark colored bile, after which the icterus diminished in intensity. The fever continued for a month. During the following months there was a gradual loss of strength with loss of appetite. The weight dropped from 198 pounds (89 Kg.) to 137 pounds (62 Kg.). The flow of bile was almost continuous. The patient complained of pains in the back and the shoulder. April 15, 1931, a laparotomy, with a Kocher incision parallel to the right costal margin and 2 inches from it, was performed. The gallbladder, distended and with thickened walls, was evacuated with a large syringe. Cholecystogastrostomy was done and the abdomen was closed. A small rubber drainage tube was left in the fistulous tract. The postoperative course was excellent. After a week, the fistulous opening emitted only a single drop of bile. The

patient regained his appetite and strength and the icterus gradually receded. He was dismissed from the hospital in good condition, May 4, 1931, and in a few months gained 26 pounds (12 Kg.). When seen recently he was in the best of health.

Congenital Scoliosis Due to Anomalous Fetal Position.—Fusari's case concerned a boy aged 6. The day the child was born, the parents observed that it presented a deviation of the thoracic and lumbar areas of the spinal column with a concavity on the left side, and that the head was inclined toward the right. In addition, the left foot was twisted and the left hand was pronated. The pronation of the left hand corrected itself spontaneously during the first year of life, but the deformity of the left foot required manual correction by the attending physician and the application of plaster casts. The parents hoped for a spontaneous improvement of the vertebral deviation and did not have the child treated. In June, 1931, they decided to bring the child (now aged 6) to the ambulatorium of a children's hospital. He was found to present a left convex cervical scoliosis and a dorsolumbar scoliosis in the opposite direction. The right shoulder was elevated. A right costal gibbus was very pronounced. The right scapula was slightly protruding. Attempts by means of suitable maneuvers to correct the deformity of the spinal column brought out marked resistance on the part of the skeleton. The roentgenographic examination revealed, at the junction of the lateral third and the middle third of the clavicle, signs of a previous fracture of long standing—possibly during the intra-uterine period. The left foot presented talipes equinus and talipes varus. The author emphasizes that the diagnosis of congenital scoliosis due to anomalous fetal position is important not only from the scientific point of view but also from the practical side, especially as regards the prognosis of the treatment. While little can be accomplished by orthopedic treatment of a deviation due to malformation of the single vertebral bodies, orthopedic treatment will have a favorable influence on a deviation that involves only the plastic parts of the spinal column, as is the case in congenital scoliosis due to abnormal position of the fetus. However, such vertebral deviations, similar to other noncongenital scolioses, may after a certain period become rigid and fixed, owing to later changes resulting from hardening of the parts involved. Hence it is necessary to apply the treatment early in order to have hopes of success. In this child, aged 6, the scoliosis was found to be difficult to influence, and the treatment instituted did not give very satisfactory results.

New Treatment for Varicose Ulcer.—Biancalana states that the new treatment consists in the use of a rubber bath-sponge applied to the varicose ulcer so as to produce a marked elastic compression. The ulcer is first cleansed thoroughly. A slight cauterization is done with a silver nitrate solution. A thin layer of zinc oxide ointment is then applied, and the ulcer is covered with gauze. The rubber sponge must be of good quality, rather hard, and must overlap the ulcer by more than 2 cm. The sponge is held in position with a compressive bandage with a semielastic band, which is wrapped about the whole leg up to the knee. The patient, with this bandage, can continue to follow his occupation: in fact, he should walk a great deal, to provoke the rhythmic contractions of the musculature, thereby aiding the circulation. The patient may feel some discomfort, which will disappear on walking about. The treatment is contraindicated in patients subject to attacks of phlebitis and also in patients confined to bed. The ten cases treated gave favorable and rapid results and there have been thus far no recurrences.

Clinica Pediatrica, Modena

13: 939-1022 (Dec.) 1931

Relation Between Axillary and Submammary Temperature, on the One Hand, and Milk Secretion. T. Taramelli.—p. 939.
*Roentgen Therapy in Infantile Paralysis. E. Bidoli.—p. 950.
Acute Cerebral Tremor Observed in a Case of Varicella. L. Greppi.—p. 965.

Roentgen Therapy in Infantile Paralysis.—Bidoli considers, from his observations in fifty cases of infantile paralysis followed from the onset until the completion of the treatment, that roentgen therapy, associated with diathermy and electrotherapy, is the method of treatment that has constantly given better results than any other method, provided it is begun early before the degeneration syndrome becomes established, because its appearance implies the institution of damages, often irreparable, involving the anterior horns of the spinal cord, which cannot usually be favorably influenced by roentgen therapy.

Diagnosi, Pisa

11: 289-316 (Dec.) 1931

Relations Between Glycemia and Arterial Pressure in Man and in the Rabbit. C. Fratini.—p. 289.
*Bone Transmission of Sounds and Murmurs in Diseases of Heart, and Its Diagnostic Importance. G. Pisani.—p. 307.

Bone Transmission of Murmurs in Diseases of Heart.—Pisani considers a recent article by Ganter in which he called the attention of physicians to the importance of bone transmission in the diagnosis of diseases of the heart. Ganter affirmed that the vibrations of a tuning fork resting on the sternum are transmitted through the joints to the other bones and that they can be heard on auscultation over the ribs, the clavicle, the head of the humerus, and sometimes also over the olecranon, whereas, over areas distant from the bones, although near the sternum, they can scarcely be distinguished. Pisani inquired into the diagnostic importance of bone transmission of sounds and murmurs in diseases of the heart, and, more particularly, Ganter's emphasis on such transmission, as a differential factor of often decisive significance as to the location of a disorder in the right or in the left ventricle, and as the index of the degree of hypertension. Pisani cannot confirm Ganter's observations, because the murmurs that are best transmitted are the mitral and not the aortic murmurs, and because he did not find a direct relation between the degree of hypertension and the extension of bone transmission.

Rassegna di Studi Psichiatrici, Siena

20: 1153-1398 (Nov.-Dec.) 1931

*Sodium Chloride Content of Cerebrospinal Fluid. G. G. Noto.—p. 1153.
Further Control Experiments on Value of Flocculation Test in Serodiagnosis of Neurosyphilis. V. Giannelli.—p. 1177.
*Researches on Hydrogen Ion Concentration and Alkali Reserve in Chronic Postencephalitic Syndromes. S. Quadri and T. Campioni.—p. 1197.
Microcephalia: Four Cases. A. Vanelli.—p. 1204.
Prepuberal Schizophrenia. A. Vanelli.—p. 1232.
*Atropine Sulphate in Treatment of Parkinson's Syndrome. P. Durando.—p. 1246.

Sodium Chloride Content of Cerebrospinal Fluid.—Noto, having determined the sodium chloride content in 260 cerebrospinal fluids derived from persons with various diseases of the nervous system, points out the behavior of that substance in the cases studied. His personal observations and an examination of the literature on the subject lead him to conclude that this research, owing to the inconstancy of the results, is of limited importance.

Alkali Reserve in Chronic Postencephalitic Syndromes.—Quadri and Campioni present the results of their researches carried out on the blood of a group of patients with chronic postencephalitic symptoms. There was revealed a certain degree of compensated acidosis in 88 per cent of the cases studied.

Atropine Sulphate in Treatment of Parkinson's Syndrome.—Durando, after calling attention to the various medicinal agents most used in the treatment of postencephalitic Parkinson's disease, reports the favorable results obtained in seven patients affected with that disease and treated with a 0.5 per cent solution of atropine sulphate.

Riforma Medica, Naples

47: 1923-1960 (Dec. 21) 1931

Evaluation of Presumable Resistance of a Patient to a Proposed Intervention, Together with Anesthesia. G. Giordanengo.—p. 1923.
*Grave Generalized Erythrodermia Desquamativa with Cutaneous Hemorrhagic Infarcts, Following Arsphenamine Administration. C. Couvert.—p. 1925.
So-Called Malignant Degeneration of Benign Tumors. M. Cusani.—p. 1928.
Technic of Pleurotomy for Empyema. A. Caucci.—p. 1933.

Erythrodermia Desquamativa Following Administration of Arsphenamine.—Couvert emphasizes that in the pathogenesis of the greater part of the hemorrhagic conditions following the administration of arsphenamine and hence also

in the pathogenesis of the hemorrhagic infarcts observed in the described case, several factors, either isolated or variously associated, must be taken into account: the preexisting conditions of the organism due to previous lesions of organs (especially hepatic and renal), a peculiar individual lability of the vascular system, a latent and preexisting hemorrhagic diathesis (taken in a broad sense), the toxicodegenerative conditions in the walls of the small vessels and capillaries, phenomena of allergy, with consequent colloidoclastic shock, small emboli due to detachment of the intima of the smallest vessels, and possibly also involvement of the sympathetic nervous system.

Acción Médica, Buenos Aires

2: 1-58 (Jan. 1) 1932

Icterus: General Considerations and Present Interpretation. C. Patiño Mayer.—p. 1.
*Referred Appendicular Pain in Acute Cholecystitis. P. N. Sivori. —p. 10.
Cholagogues and Cholecystokinetic Substances (True Cholagogues). R. Pardal.—p. 15.
Jaundice. A. T. Terragno.—p. 31.
Treatment of Jaundice. P. Savy.—p. 37.
Indigenous Elephantiasis. A. J. Pavlovsky.—p. 41.

Referred Appendicular Pain in Acute Cholecystitis.—Sivori states that referred pain at McBurney's point in some cases of acute cholecystitis, mistaken diagnosis resulting from it and finding of a healthy appendix at operation are items to be remembered during the examination of patients. He describes several pertinent cases from his own experience and from that of others and concludes that although appendicitis frequently coexists with cholecystitis, observation of referred appendicular pain in acute cholecystitis is not at all rare. Its explanation lies in a reflex mechanism set up by the relations of the gallbladder through the splanchnic nerve with the last intercostal and the abdominogenital nerves. In case of diagnostic hesitation between appendicitis and cholecystitis the author advises a vertical incision to be prolonged later in the direction indicated by further observation.

Klinische Wochenschrift, Berlin

11: 49-88 (Jan. 9) 1932

Changes and Progress in Knowledge on Inflammation. F. Henke and M. Silberberg.—p. 49.
*Blood Pressure Reduction Following Bodily Exertion. F. Schellong. —p. 53.
Genesis of Atypical Terminal Conditions in Diabetes Mellitus. L. Wislicki.—p. 56.
Sensitization Against Chemical and Plant Substances in Animals. G. Stümpke.—p. 58.
*Importance of Time Factor in Modification of Blood Sugar Content by Injection of Insulin and by Food Intake. R. Enger.—p. 61.
Goiter Prophylaxis and Form of Administration of Iodine. G. Pfeiffer. —p. 63.
Clinical Aspects of Hypophyseal Disturbances on Basis of Erdheim's Hypophyseal Tumor. G. Wiele.—p. 66.
New Modified Barium Sulphate for Visualization of Mucous Membrane. C. Nordwig.—p. 68.
Pharmacologic Action of New Derivative of Papaverine. O. Wolfes and H. Kreitmair.—p. 69.
Significance of Increase in Hemoglobin in Oxygen Deficiency. P. Meyer. —p. 69.
Adsorption and Elution of Antigen from Alcoholic Organ Extracts. A. J. Weil and J. Berendes.—p. 70.
"Avertin" Anesthesia. E. F. Goldschmidt and S. C. Harvey.—p. 70.

Blood Pressure Reduction Following Bodily Exertion.—Schellong calls attention to a former report, in which he described a disturbance in the regulation of the circulatory system, which he had noticed in patients with hypophyseal cachexia (Simmond's disease). The disturbance becomes manifest as a reduction in blood pressure following bodily exertion and is probably the cause of the dizziness and attacks of fainting, which are characteristic for that disease. He also noted that the decrease in pressure occasionally developed after a slight exertion, or with the patient standing or elevating the leg while lying on the back. The author considered this a sign of a slight impairment of the anterior lobe of the hypophysis. In one of the patients who died, the necropsy corroborated the impairment of the anterior pituitary. This observation induced the author to test the regulation of the circulation on normal persons and also on persons in whom an involvement of the anterior pituitary could be expected; namely, in those with endogenic emaciation or with constitutional hypotension. The test was made also on patients with exophthalmic goiter, and on those with hypertension or with vasoneurosis. The blood pressure and the pulse rate were determined (1) when the person was reclining and when standing, (2) after elevating both legs until tired, and (3) after climbing stairs. In 25 per cent of the normal persons the author noted a slight decrease (from 5 to 15 mm. of mercury) when the person was standing. A fluctuation to the extent of 15 mm. of mercury he considers as the limits of normality. He emphasizes that the essential factor is not the reduction in the blood pressure but the disturbance in the adaptability. The regulatory disturbance is most pronounced in hypophyseal cachexia. Substitution therapy with hypophyseal substances often counteracts, together with the other symptoms, also the regulatory disorder. In endogenic emaciation and in constitutional hypotension a disturbance in the adaptability of the blood pressure is frequently present. The symptom is also found in some cases of thyrotoxicosis, but only in young persons with hypertension or with vasoneurosis. It has been observed likewise in several cases of tabes dorsalis. The observations indicate either that the anterior pituitary is the cause of the regulatory disturbance or that the disorder is in the sympathetic centers of the midbrain. The author submits this problem for further investigation.

Time Factor in Modification of Blood Sugar Content by Injection of Insulin.—Enger shows that in order to obtain the optimal insulin action it is not enough to maintain the right proportion between insulin and food and the suitable distribution of the insulin doses, but the timely spacing of the meals is of great importance. Since the maximum insulin action is later than the maximal increase in the blood sugar after food intake, it has been found advantageous to give shortly after the insulin injection only a little food, and then give the main meal from one and one half to two hours after the insulin injection. When insulin is given for the first time it is permissible to give a larger amount of carbohydrates shortly after the injection, for after the first time the blood sugar content occasionally decreases more rapidly. Since the insulin action persists for longer periods, suitable timely regulation of the food intake will make it possible to limit the insulin injections to two each day. The author also describes a case of diabetes with paroxysmal tachycardia in which, simultaneously with a reduction in the pulse rate, he noted a considerable reduction in the insulin requirements.

Wiener klinische Wochenschrift, Vienna

45: 33-64 (Jan. 8) 1932

Tuberculous Etiology of Chronic Uveitis and Other Inflammatory Diseases of Eye. J. Meller.—p. 33.
*Spiral Form of Muscle Fibers After Electric Shock: Their Histology. S. Jellinek.—p. 37.
*Skin Reactions with Toxins of Streptococci and Staphylococci, Especially in Septic Diseases. O. Erlsbacher and P. Saxl.—p. 39.
Tendencies in Psychic Hygiene. E. Stransky.—p. 42.
Cancer of Rectum: Failure of Practioner to Recognize It. H. Steindl. —p. 46.
Clinical Aspects of Sarcoma of Penis. H. Meller.—p. 49.
Theory of Artificially Induced "Ascending Phlebitis." M. Wolf.—p. 50.
Treatment of Inoperable Carcinoma of Uterus. W. Latzko.—p. 52.
Reduction of Complement in Parenchymatous Diseases of Liver. A. Bergel and F. Schüle.—p. 53.
Simulation of Disturbances in Walking. S. Erben.—p. 53.
Indications for Treatment with Cholagogues. E. Lauda.—p. 54.

Spiral Form of Muscle Fibers After Electric Shock.—Jellinek relates his observations on the muscles of two men who had died as the result of an electric shock. Microscopic examination of the individual muscle fiber revealed characteristic morphologic changes. The fiber appears as a sharply defined spiral formation, which, in the regularity of its construction, resembles a screw bolt. The author gives a detailed description of the microscopic aspects and also reproduces a photomicrograph that shows the muscle fiber magnified 760 times. He also attempted to produce these changes in guinea-pigs by exposing them to electric current of high tension and he found the same spiral forms, but he points out that they develop only after exposure to an alternating current. A direct current of high voltage did not produce this phenomenon. In the conclusion the author points out that the morphologic changes of the muscle fibers are significant not only because this structural change of an organic substance has hitherto not been noticed but also because they evidently represent a purely electro-energetic effect, which is not only significant for elec-

tropathology but may be a guide in the investigations into the primary causes of the biologic field and ray action.

Skin Reactions with Toxins of Streptococci and Staphylococci. — Erlsbacher and Saxl made cutaneous tests with toxins on healthy persons and on patients with septic infections and on patients with other disorders. Their observations are summed up as follows: 1. Certain culture filtrates from several hemolytic strains result in positive skin reactions, which the authors interpret as allergy, in healthy persons and in patients without sepsis. The reaction is absent (anergy) in patients with sepsis and also in a number of patients with tuberculosis, leukemia and carcinoma. 2. A culture filtrate of Staphylococcus pyogenes-aureus gives positive skin reactions in all healthy persons (allergy). It gives weaker reactions in several cases of generalized staphylococcal infections (hyperergy). 3. A culture filtrate of Bacterium coli resulted in positive skin reactions in all healthy persons. 4. Adults generally show a marked allergy against the toxins of streptococci, staphylococci and colon bacilli. 5. There are areactive persons (usually those severely ill) who do not react to any of those toxins. 6. It is possible to produce antitoxins against the streptococcal toxins and the staphylococcal toxins, which counteract the skin reaction. This neutralization can be employed not only for antibacterial protection but also for the evaluation of therapeutic serums.

Zeitschrift für Krebsforschung, Berlin

35: 109-274 (Jan. 20) 1932

Production of Ehrlich's Adenocarcinomas by Means of Embryonal Pulp from Animals with Ehrlich's Carcinoma. G. Tesauro.—p. 109.
Aspects of Multiple Primary Carcinomas. M. I. Maljatzkaja.—p. 123.
*Fluorescing Substances Causing Decrease in Resistance of Erythrocytes During Cancer. A. H. Roffo.—p. 130.
Disinfection of Transplantable Tumors. N. Krotkina.—p. 136.
Histophysiologic Studies on Tumor Cells. G. Roskin.—p. 140.
Hypernephroma Cultures from Guinea-Pigs in Vitro. G. Roskin.—p. 143.
Sarcoma Vaccination of Infantile Rats as Suitable Test Method for Metastasis Problem. J. Flaks.—p. 150.
Spectrographic Examinations on Body Fluids of Cancer Patients. L. Karczag and M. Hanák.—p. 153.
Glutathione Content and Autolysis of Malignant Growths. H. Heinlein.—p. 161.
Simultaneous Occurrence of Cancer and Tuberculosis in Human Testis. W. Pflugradt.—p. 164.
Slight Susceptibility for Vaccination Tumors in Young of Rats with Tumors. L. Marx.—p. 170.
Rare Pulmonary Tumor. S. Scheidegger.—p. 172.
*Mortality from Cancer. K. Freudenberg.—p. 178.
Modification of Tumor Growth by Lipoids. G. Tesauro.—p. 269.

Fluorescing Substances and the Erythrocytes in Cancer.—Roffo describes experiments which indicate that fluorescing substances exert photodynamic actions on the erythrocytes. These influences become manifest in a more or less pronounced hemolysis. For his experiments the author employed the two main derivatives of fluorescein, namely, eosin and erythrosin, and he found the latter most suitable. In describing the technic of his erythrosin test he states that he used the 1 per cent solution of erythrosin. The action of the erythrosin varies according to the type of the erythrocytes. The erythrocytes from rats with tumors (carcinoma and sarcoma) hemolyse much more rapidly than the erythrocytes of normal rats. In tests with normal blood the total hemolysis of four drops of erythrocytes required one hour, whereas the hemolysis of erythrocytes from neoplastic rats was always completed in less than fifty minutes, and in many instances already in from ten to thirty minutes. This pronounced hemolysis of the erythrocytes of rats with cancer develops early, for it was noticeable in tumors that had existed only fifteen days. The author considers this observation interesting not only because of its relation to the biology and the nature of the process but also because of its diagnostic value, which would become evident if the results should be the same in the blood of cancer patients. Results of studies on the latter problem will be reported by the author in the near future.

Mortality from Cancer.—In his comprehensive study, Freudenberg states that the cancer mortality of the various age groups shows great differences. As a result of this the average cancer mortality of an entire population is influenced considerably by only slight variations in the age grouping. For this reason a comparison of figures can give a true picture only if differences in the age grouping are taken into consideration. But even if the age grouping is taken into account, a marked increase in cancer mortality is observable during the last fifty years.

Zeitschrift f. d. ges. Neurol. u. Psychiatrie, Berlin

138: 1-164 (Jan. 5) 1932

*Division of Anterolateral Columns of Spinal Cord in Human Beings. O. Foerster and O. Gagel.—p. 1.
Present Status of Problem of Moral Defect. J. Glaser.—p. 93.
Internal Stuttering and Presentation Movement. H. Freund.—p. 104.
Interpretation of Schizophrenic Symptoms as Functional Disintegration. H. Krisch.—p. 109.
Frontal Ataxia. R. Brun.—p. 122.
Hypothenar Skin Reflex, a Spastic Sign on the Hand. K. Mayer.—p. 131.
Arthropathy Caused by Peripheral Nerve Injury. W. Creutz.—p. 140.
Demarcation of Motor Nuclei of Cerebral Nerves on Basis of Retrograde Cellular Changes in Case of Tumor of Base of Skull. A. Stender.—p. 148.

Division of Anterolateral Columns of Spinal Cord.—Foerster and Gagel in their comprehensive study on chordotomy first review its history. They further state that the basis of this procedure is the theory that the pain conduction in the spinal column passes through the anterolateral column. In the main portion of their report they discuss the origin and course of the tracts of the anterolateral columns, the pathophysiology of the anterolateral columns and the results that they obtained in the twenty-nine cases in which they performed chordotomy, and finally they give the casuistics. In the summary evaluation they state that chordotomy is advisable particularly in the gastro-intestinal crises of patients with tabes. In these cases it should be done bilaterally on the upper rim of the second or first thoracic segment. In the majority of these cases the operation gives excellent results. Likewise in cases of severe carcinosis of the vertebral column, or in tumors of the pelvis, the patients can generally be freed from their pains by chordotomy. It is also helpful in radiculitis and to counteract the pains in amputation neuroma. Bilateral chordotomy is usually preferable to the unilateral operation. However, the authors warn that one should not expect that the division of the anterolateral columns will counteract permanently all pains. In this respect chordotomy shares the fate of the majority of operations that are done to counteract pains. Pain is one of the fundamental manifestations of life and of greatest significance as the guardian of life and health, and nature has prepared for it many paths, the obstruction of all of which is quite often impossible.

Zeitschrift für Tuberkulose, Leipzig

63: 81-160 (Dec.) 1931

Serodiagnosis of Tuberculosis. F. Klopstock.—p. 81.
*Observation of Spherical Bodies in Pneumothorax Space. E. Hager and F. Langebeckmann.—p. 90.
Experiences on Healing of Caverns. Irene Barát.—p. 97.
Influence of Thiosulphate (Calcium Dithioglycolate) on Course of Experimental Tuberculosis in Guinea-Pigs. W. Blumenberg.—p. 100.
Systematic Roentgen Examination of Employed Young People for Detection of Tuberculosis. H. Büsing.—p. 104.
Experiments with Pulmonary Lipase. D. Kanócz.—p. 113.
Improvement of Curative Action and of Therapeutic Technic of Benzine Preparations in Tuberculosis. J. Kairiukstis.—p. 116.

Observation of Spherical Bodies in Pneumothorax Space.—Hager and Langebeckmann call attention to a peculiarity that is occasionally observed in the course of pneumothorax treatment, namely, the formation of spherical bodies, which may be free or fixed and of which there may be several or only one. That these bodies are comparatively rare is proved by the fact that one author observed only 2 such cases among 700, another author 3 cases among 512, and the authors themselves only 1 case in 400. A review of the literature reveals the diverse opinions about the development. The various theories of the genesis of the peculiar bodies and the theories on the coagulability of the blood in the pleural cavity are discussed by the authors. The size of the bodies, they state, varies from that of a cherry to that of a goose egg. The shape is likewise variable. As far as the authors were able to determine, only four of these bodies have so far been subjected to pathologic-anatomic study. This they ascribe to the fact that the bodies are usually accidental discoveries. The color is white to yellowish gray. In one instance microscopy revealed no traces of tissues or cells, whereas in another case necrotizing exudate cells were discovered as the primary constituent. Chemical examination revealed the protein character and staining revealed

fibrin structure. One body was found to contain fibrin and blood. The time of existence varies from several weeks to several years. Some reports indicate that the bodies had disappeared following the resorption of the exudate. The case report which the authors give is illustrated by several roentgenograms that show the body as a pulmonary appendage.

Zentralblatt für Chirurgie, Leipzig

59: 129-192 (Jan. 16) 1932

*Dangers of Intravenous Continuous Drop Infusion. H. Friedrich and J. F. Buchaly.—p. 131.
Thrombosis of Arteria Iliaca Externa Dextra Following Appendectomy. F. Jacoby.—p. 137.
Substitute for Indigo Carmine Solution in Intravenous Urologic Diagnosis. E. M. Fuss.—p. 141.
Clinical and Roentgen Contributions to Treatment of Varicose Veins According to Unger. A. Pop.—p. 141.
Spatula with Illumination and Suction for Use in Interventions on Bladder and Prostate. T. Hryntschak.—p. 144.
Tensile Strength of Surgical Suture Material. H. Polano.—p. 147.
Technic of Extraperitonization of Bladder. T. Hryntschak.—p. 149.

Dangers of Intravenous Continuous Drop Infusion.—Friedrich and Buchaly, after calling attention to a case of fatal cerebral embolism, as reported by Orator and Schleussing, describe a case of fatal pulmonary embolism. Since both of these fatalities resulted from continuous intravenous infusion, the authors consider it necessary to call attention to this danger. They think that, in the vein into which the continuous infusion is made, formation of a thrombus is comparatively frequent. Doubtless this is due largely to local injury of the internal wall of the vessel, which in turn is caused by direct mechanical irritation from the cannula and by the inflowing solution. To minimize the mechanical irritation, the authors advise careful introduction of the cannula and immobilization of the arm by a splint dressing, and they also caution not to let the cannula remain longer than is absolutely necessary. They state that the infusion fluid should be isotonic rather than hypertonic and that the quantity as a rule should not exceed 1 liter daily. If thrombosis develops in spite of these precautions, a prolonged immobilization of the thrombosed arm is usually advisable. Ligation is not always necessary, for a thrombus may even develop at the site of ligation. However, in cases in which the thrombus grows upward, ligation is necessary. In the conclusion the authors state that they do not wish to discredit the intravenous continuous drop infusion but only advise a more careful selection of the cases. With the necessary precautions they consider it advisable (1) in postoperative, acute circulatory weakness; (2) in postoperative peritonitis; (3) immediately before and during surgical interventions on patients with impaired cardiac action as a result of progressive, diffuse peritonitis; also in those who have lost large amounts of blood and the urgency of the intervention does not permit a preoperative blood transfusion, and, finally, in persons with severe shock in whom an immediate operation is necessary; (4) in rapidly increasing general prostration, for instance, in ileus with vomiting of several days' duration, and in some cases of fistulas of the small intestine. However, they consider intravenous continuous infusion as not without danger and therefore as inadvisable in the following conditions: (1) in weakness and in circulatory disturbances that do not endanger the life of patients; (2) as a substitute for a limited intake in gastric and intestinal operations; and (3) as a prophylactic measure against postoperative thrombosis.

Zentralblatt für Gynäkologie, Leipzig

56: 129-192 (Jan. 16) 1932

*New Method for Measuring Labor Pains. M. Temesváry.—p. 130.
Pressure of Fetal Vertebral Column or Hydraulic Pressure. W. Liepmann.—p. 136.
Biologic Action of Rays of Various Wavelengths. L. von Schubert.—p. 138.
Participation of Midwife in Care for Pregnant Women. E. Philipp.—p. 140.
Regulation of Offspring and Moral Law. A. Niedermeyer.—p. 146.
Congenital Skin Defect in Mother and Child. G. K. F. Schultze.—p. 155.
Experiences with New Ecbolic. W. Schmidt.—p. 158.
Formic Acid Therapy in Diseases of Female Genitalia. D. Eisenstädter.—p. 161.

New Method for Measuring Labor Pains.—Temesváry reviews various methods that have been employed in measuring the uterine contractions and then describes the method which he perfected in his experiments on the ecbolic action of incretory organ extracts. He designates his methods as proctotocography, for he introduces a balloon (metreurynter) into the rectum. This balloon, which he fills with from 80 to 100 cc. of water, is connected with a Marey's drum and the latter's indicator with a kymographion. The curves that are recorded with this apparatus indicate the time between the uterine contractions and the duration and character of each contraction. The author shows several curves which he recorded with this method, and he emphasizes that it is a simple and harmless procedure. But although it records the character and the duration, it does not indicate the absolute intensity of each contraction. When an ecbolic is administered, it can only be observed whether the amplitude of the contractions increases or not. However, the author attempted to modify his method so that it would indicate also the intensity of the uterine contraction and he succeeded largely; for instance, in one case his apparatus indicated that during a contraction the pressure on the balloon increased from 80 to from 85 to 87, but after an ecbolic had been administered the pressure increased from 80 to 90, and up to 120; that is, the intensity of the contraction had increased more than fourfold. The author is convinced that if allowance is made for a small margin of error this procedure is a suitable method for measuring uterine contractions.

Nowiny Lekarskie, Poznań

43: 629-764 (Dec. 4) 1931

Pathogenesis of Gout. I. Hoffman.—p. 731.
*Obesity and Its Treatment. S. Tuszewski.—p. 736.
Glycosuria with Normal Blood Sugar Level. J. Itelson.—p. 742.
Diabetes Insipidus. T. Kucharski.—p. 746.
Two Cases of Scurvy Complicating Other Diseases. F. Łabendziński.—p. 748.

Obesity and Its Treatment.—Tuszewski discusses the present status of obesity, especially its treatment. He calls attention to the water retention action of the pancreas noted in connection with insulin treatment. After a discussion of causes, diet, habits and endocrine glands, he summarizes the treatment into dietetic, glandular and physical therapy. With regard to the diet, he believes that from 100 to 150 Gm. of albumin is a daily requisite to maintain proper metabolism. Fats and sugars are to be excluded, especially sugars, which in his opinion promote absorption of foodstuffs. The views on water are interesting: far reaching restriction of liquids is advised, and the same in reference to table salt (to remove water retention). Diuresis is strongly advised. The glandular therapy is restricted to the thyroid (to increase metabolism), anterior pituitary and sex glands, and this mode of treatment is essential in obesity. Exercise is a valuable adjunct but the condition of the heart should be watched; all cases of obesity present some injury of the heart or circulation. Massage, as well as hot baths, he holds to be worthless; cool baths (15 C.) are beneficial. The diaphoresis should be replaced by diuresis to avoid discomfort.

Hospitalstidende, Copenhagen

74: 1091-1118 (Nov. 12) 1931

*Studies on Jaundice: V. Relation of Serum Cholesterol in Diseases of Liver and Biliary Tract, Especially in Acute Hepatitis. T. Geill.—p. 1094.

Relation of Serum Cholesterol in Diseases of Liver and Biliary Tract, Especially in Acute Hepatitis.—Geill made 165 determinations of the blood cholesterol in eighty-five patients with jaundice (seventy-two with hepatitis). He concludes that at the start of the jaundice low cholesterol values testify for hepatitis and against jaundice due to stasis, but in a number of cases of hepatitis hypercholesteremia appears even in the beginning stage.

74: 1119-1130 (Nov. 19) 1931

*Acetonuria in Acute Abdominal Disorders. S. E. Kofoed.—p. 1119.

Acetonuria in Acute Abdominal Disorders.—Kofoed made tests of acetonuria according to Rudoy's modification of Legal-Lange's method at the start of treatment in 445 patients, of whom 101 had acute abdominal conditions, and 40, other abdominal disorders. The results seem to show that acetonuria may afford a valuable indication of acute appendicitis, especially in the first twenty-four hours.

74: 1159-1186 (Dec. 3) 1931

*Juvenile Cirrhoses. L. Melchior.—p. 1159.
*Contribution to Knowledge of Incubation Period of Dementia Paralytica. E. Lomholt.—p. 1175.

Juvenile Cirrhoses.—Of the nine cases of true cirrhosis in children aged up to 15 and in patients between 15 and 20 revealed in Melchior's necropsy material, detailed description is given of a case of Hanot's hypertrophic cirrhosis in an infant, aged 1 year, and of three cases of hepatic disease with hepatolenticular degeneration in children between 12 and 14.

Incubation Period of Dementia Paralytica. — Lomholt concludes that the incubation period for dementia paralytica should be reckoned as from ten to twenty-five years instead of, as frequently, from ten to fifteen years.

74: 1203-1230 (Dec. 17) 1931

*Case of Gee's Disease. E. Gjørup.—p. 1205.
*Transmission of Chicken Leukosis to Chicks. J. Engelbreth-Holm and A. Rothe Meyer.—p. 1215.
*Anemia in Pulmonary Tuberculosis: Prognostic Significance and Treatment. S. Magnusson.—p. 1219.

Case of Gee's Disease.—Gjørup says that while his case in a woman, aged 22, presents, on the whole, a picture identical with Gee-Herter's disease and "celiac rickets," the late onset and the order in which the various symptoms developed are noteworthy. Rickets and osteoporosis appeared at the age of 14 but diarrhea and steatorrhea were not noted until seven years later; four months afterward a typical scurvy set in, which yielded to treatment, and seven months afterward, a typical tetany, which has persisted. There was no achylia and the blood picture was unchanged. The author sees in this case a transition between intestinal infantilism, which, according to most authors, occurs only in early childhood, and nontropical sprue in adults.

Transmission of Chicken Leukosis to Chicks. — Engelbreth-Holm and Meyer report that chicken leukosis may be transferred to chicks only a few days old, a typical erythroleukosis resulting which in all essential factors resembles leukosis in mature chickens but apparently has a more rapid and extreme development.

Anemia in Pulmonary Tuberculosis.—Magnusson's investigations in 352 cases of active pulmonary tuberculosis show that improvement occurs in the majority of cases without anemia at the start of treatment, including the cases with cavern (with and without collapse therapy), while relatively few of the cases with considerable anemia improve.

74: 1231-1258 (Dec. 24) 1931

Case of Suprarenal Tumor and One of Tumor of Pituitary Body with Suprarenal Hyperplasia, Both with Striae Cutis Distensae. G. Wieth-Pedersen.—p. 1231.
Measurements of Increase in Subjective Clearness During Adaptation. H. C. Andersen.—p. 1245.
*Case of Bilateral Suprarenal Cysts. P. Levison.—p. 1253.

Case of Bilateral Suprarenal Cysts.—Levison thinks that this is the first instance of diagnosis of suprarenal tumors during life by roentgen examination. The discovery was accidental.

Norsk Magasin for Lægevidenskapen, Oslo

92: 1269-1380 (Dec.) 1931

*Skin Temperatures in Blocking of Arteries in Lower Extremities and in Phlebitis. H. Ipsen.—p. 1269.
*Thrombi and Emboli in Gastric and Duodenal Ulcers. L. L. Linneberg.—p. 1293.
Review of Fractures in Division III of Ullevål Hospital, with Especial Regard to Cases with Operative Treatment. H. F. Harbitz.—p. 1300.
Treatment of Fractures in Namdal Hospital. A. Arnesen.—p. 1308.
*Relation of Leukocytes After Operations. M. Dahle.—p. 1319.

Skin Temperatures in Phlebitis.—Ipsen says that a difference of over 1 degree (Celsius) in the average daily temperature of the two feet (average of five measurements with three-hour intervals) points to a pathologic circulation in one extremity. This symptom appears to be constant in phlebitis, while not specific, and, he believes, will often allow diagnosis of phlebitis at an early stage. His present procedure is to take foot temperatures when a patient complains postoperatively of pain in one extremity. When the temperature symptom has not appeared in a short time (eighteen hours, possibly more in pelvic phlebitis), phlebitis has not been seen.

Thrombi and Emboli in Gastric and Duodenal Ulcers. —Linneberg found thrombosis and embolism in 3.83 per cent of 811 patients with gastric and duodenal ulcers treated medically. There were no fatal emboli. The number of cases increased from about 2 per cent from 1921 to 1925 to about 5 per cent from 1926 to 1930. A limited water intake is thought to be a strongly disposing factor toward the origin of thrombi and emboli.

Relation of Leukocytes After Operations. — Dahle's examinations in twenty-one surgical patients showed a pronounced increase in the leukocyte count, the values rising during the operation, reaching a maximum in the course of twenty-four hours, and becoming normal after four or five days. There was a marked increase in the number of neutrophil leukocytes, with a slight shifting to the left. The decrease in the number of lymphocytes was relatively most marked; the eosinophils disappeared entirely during the first days after operation. The sedimentation reaction of the red blood corpuscles increased gradually following operation, to attain the maximum in from five to ten days, with return to normal, in uneventful cases, in from ten to twenty days after operation.

Ugeskrift for Læger, Copenhagen

93: 1275-1294 (Dec. 24) 1931

*Sporadic Goiter on Genotypical Basis. E. Meulengracht.—p. 1275.
*Etiologic Connection Between Generalized Zoster, Leukemia and Chickenpox. P. Damm.—p. 1279.
*Serodiagnosis of Syphilis. J. R. Mørch.—p. 1283.

Sporadic Goiter on Genotypical Basis. — Meulengracht says that in the more or less nodular character of the goiter, its duration for up to twenty-five years, and the almost complete absence of complication with the symptoms of exophthalmic goiter, his cases in six sisters and an aunt resemble the usual isolated sporadic cases. Two clinically similar families are reported in the literature (Siemens, Bluhm). He is inclined to believe that investigation of cases of apparently sporadic goiter would not infrequently disclose other cases in the same family, and he sees in these cases of goiter on a genotypical basis the explanation of etiologically and pathologically myterious cases of seemingly isolated sporadic goiter.

Etiologic Connection Between Generalized Zoster, Leukemia and Chickenpox.—In Damm's case of generalized zoster with lymphatic leukemia, the changes in the spinal cord revealed on necropsy are attributed to the leukemia. As leukemia appears to be a disposing factor in the origin of zoster, the cause of which is assumed to be an unknown virus, he says that in patients with zoster the possible presence of leukemia should be borne in mind. In the case of chickenpox also reported the patient with zoster is believed to have been the source of infection.

Serodiagnosis of Syphilis.—Mørch states that the international laboratory conference held in Montevideo in 1930, under the auspices of the Committee of Hygiene of the League of Nations, confirmed that the combination of Kahn's precipitation reaction and a reliable Wassermann method is the best means for the certain diagnosis of syphilis.

93: 1295-1314 (Dec. 31) 1931

*Pleuritis in Adults: Pathogenesis and Prognosis. K. Secher.—p. 1295.
Presentation and Dosage of Medicaments in Liquid Form. K. Schroeder.—p. 1298.
Method for Colorimetric Microdetermination of Urea in Blood. M. Claudius.—p. 1301.
*Impression of Diagnostic Value of Oral Cholecystography. L. Østergaard-Christensen.—p. 1303.

Pleuritis in Adults.—Secher says that all cases of "primary" pleuritis must be regarded as tuberculous. The prognosis is doubtful. The large number of succeeding cases of pulmonary tuberculosis demands the physician's careful attention in the first years following the pleurisy, and patients should be informed as to the nature of the disease and the possible consequences.

Impression of Diagnostic Value of Oral Cholecystography.—Østergaard-Christensen has used cholecystography as a diagnostic aid in forty-six clinically doubtful cases of gallstones. He finds that a negative cholecystogram points to disease of the biliary tract, while a normal cholecystogram militates strongly against it.